Code No. 11042517

BRIDGEPORT SERIES I V2XT

BOSS XT PARTS MANUAL

Bridgeport®

BRIDGEPORT MACHINES, INC.

SERIES I CNC
MILLING, DRILLING AND BORING MACHINE
MODEL V2XT
PARTS MANUAL
BOSS XT

Code No. 11042517

January 1992

Bridgeport®

BRIDGEPORT MACHINES, INC.

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IMPORTANT

SAFETY

To prevent serious bodily injury, you should observe the following basic safety precautions when installing, operating or servicing your Bridgeport milling machine.

1. Follow all instructions in the manual.
2. Wear approved industrial safety glasses and safety shoes.
3. **DO NOT** wear gloves, long sleeves, long hair, rings, watches, jewelry or other items that could become caught in moving parts.
4. Keep all parts of your body away from moving parts (belts, cutters, gears, etc.)
5. Use proper point of operation safeguarding.

These and other safety precautions are discussed in the American National Standard Institute Standard entitled *Safety requirements for the construction, Care, and use of Drilling, Milling, and Boring Machines,* (ANSI B11.8-1983).

This publication is available from: The Amercian National Standards Institute
1430 Broadway
New York, New York 10018

Safeguarding for protection at the point of operation can only be designed and constructed when the parameters of the particular operation have been determined. As a result, ANSI B11.8-1983, Section 5.1, states that *"it shall be the responsibility of the employer to provide, and ensure the use of, a guard, guarding device, awareness barrier, awareness device, or shield..."*

To assist machine users in designing point of operation safeguarding for their specific machine applications the Occupational Safety and Health Administration has published a booklet entitled *Concepts and Techniques of Machine Safeguarding* (O.S.H.A. Publication Number 3067).

This publication is available from: The Publication Office - O.S.H.A.
U.S. Department of Labor
200 Constitution Avenue, NW
Washington, D.C. 20210

The general purpose point of operation shield provided with this machine and shown in certain illustrations throughout this manual may not be appropriate and cannot be utilized for all possible appilications of the machine. Use additional or alternate safeguarding where this shield is not appropriate or cannot be utilized. Note that for purposes of display, the shield has been removed in certain other illustrations in this manual.

IMPORTANT SAFETY NOTICE

Bridgeport Machines supplies a safety shield for protection from chips and coolant with every machine we ship.

The Bridgeport chip and coolant shields have been designed with the highest clear impact material commercially available: KODAR PETG Copolyester 6763. It has an impact strength 5 to 10 times greater than acrylic (plexiglass) or Butyrate (UVEX) materials, thereby offering the greatest protection for our customers.

Some of the new "easy to dispose of" coolants and/or cutting oils may contain chemicals harmful to Copolyester 6763. These chemicals are: Mono-Ethanolamine, Di-Ethanolamine, Tri-Ethanolamine and the combination thereof. THESE CHEMICALS MAY SIGNIFICANTLY REDUCE THE IMPACT STRENGTH OF THE SHIELD WITHIN DAYS, AND COULD DESTROY THE ENTIRE SHIELD IN WEEKS.

USE OF COOLANTS AND/OR CUTTING OILS CONTAINING THESE CHEMICALS WILL VOID THE WARRANTY ON YOUR BRIDGEPORT SHIELD, AND COULD CAUSE INJURY TO YOUR WORKERS.

BRIDGEPORT SAFETY LIST
ALL COUNTRIES

1. DON'T run your machine until you have read and understood the Bridgeport Operator and Maintenance manuals.

2. DON'T run your machine until you have read and understood all machine and control key signs.

3. DON'T run your machine for the first time without a qualified instructor. ASK your supervisor for help when you need it.

4. PROTECT your eyes. Wear safety glasses with side shields at all times.

5. DON'T get caught in moving parts. Remove watches, rings, jewelry, neck-ties, and loose-fitting clothes.

6. PROTECT your head. Wear a safety helmet when working near overhead hazards.

7. KEEP your hair away from moving parts.

8. PROTECT your feet. Always wear safety shoes with steel toes and oil-resistance soles.

9. Gloves are easily caught in moving parts. TAKE THEM OFF before you turn on the machine.

10. Loose objects can become flying projectiles. REMOVE all loose items (wrenches, chuck keys, rags, etc.) from machine before starting.

11. NEVER operate a machine tool after taking strong medication, using non-prescription drugs or consuming alcoholic beverages.

12. SAFEGUARD the cutting zone ("point of operation). Use standard, general purpose safeguard where possible. Use special safeguards when required.

13. Protect your hands. STOP the spindle completely BEFORE changing tools.

14. Protect your hands. STOP the spindle completely BEFORE you load or unload a workpiece.

15. Protect your hands. STOP the spindle completely BEFORE you clear away chips or oil. Use brush or chip scraper. NEVER use your hands.

16. Protect your hands. STOP the spindle completely BEFORE you adjust the workpiece, fixture or coolant nozzle.

17. Protect your hands. STOP the spindle completely BEFORE you take measurements.

18. Protect your hands. STOP the spindle completely BEFORE you open safeguard or covers. Never reach around a safeguard.

19. Protect your hands. STOP the machine BEFORE you change or adjust belts, pulleys or gears.

20. PROTECT your hands. Keep hands and arms clear of spindle start switch when changing tools.

21. PROTECT your eyes and the machine. Never use a compressed air hose to remove chips.

22. KEEP work area well lighted. Ask for additional light if needed.

23. DON'T slip. Keep your work area clean and dry. Remove chips, oil and obstacles.

24. NEVER lean on your machine. Stand away when the machine is running.

25. DON'T get trapped. Avoid pinch points caused by motion of table and head.

26. PREVENT objects from flying loose. Securely clamp and locate workpiece. Use stop blocks where necessary. KEEP clamps clear of cutter path.

27. PREVENT cutter breakage. Use correct table feed and spindle speed for the job. Reduce feed and speed if you notice unusual noise or vibration.

28. PREVENT cutter breakage. Rotate spindle in clockwise direction for right-hand tools., counterclockwise for left-hand tools. Use the correct tool for the job.

29. PREVENT workpiece and cutter damage. Never start the machine when the cutter is in contact with the workpiece.

30. Dull and damaged tools break easily. Inspect tools and tool holders. Keep tools sharp. Keep tool overhang short.

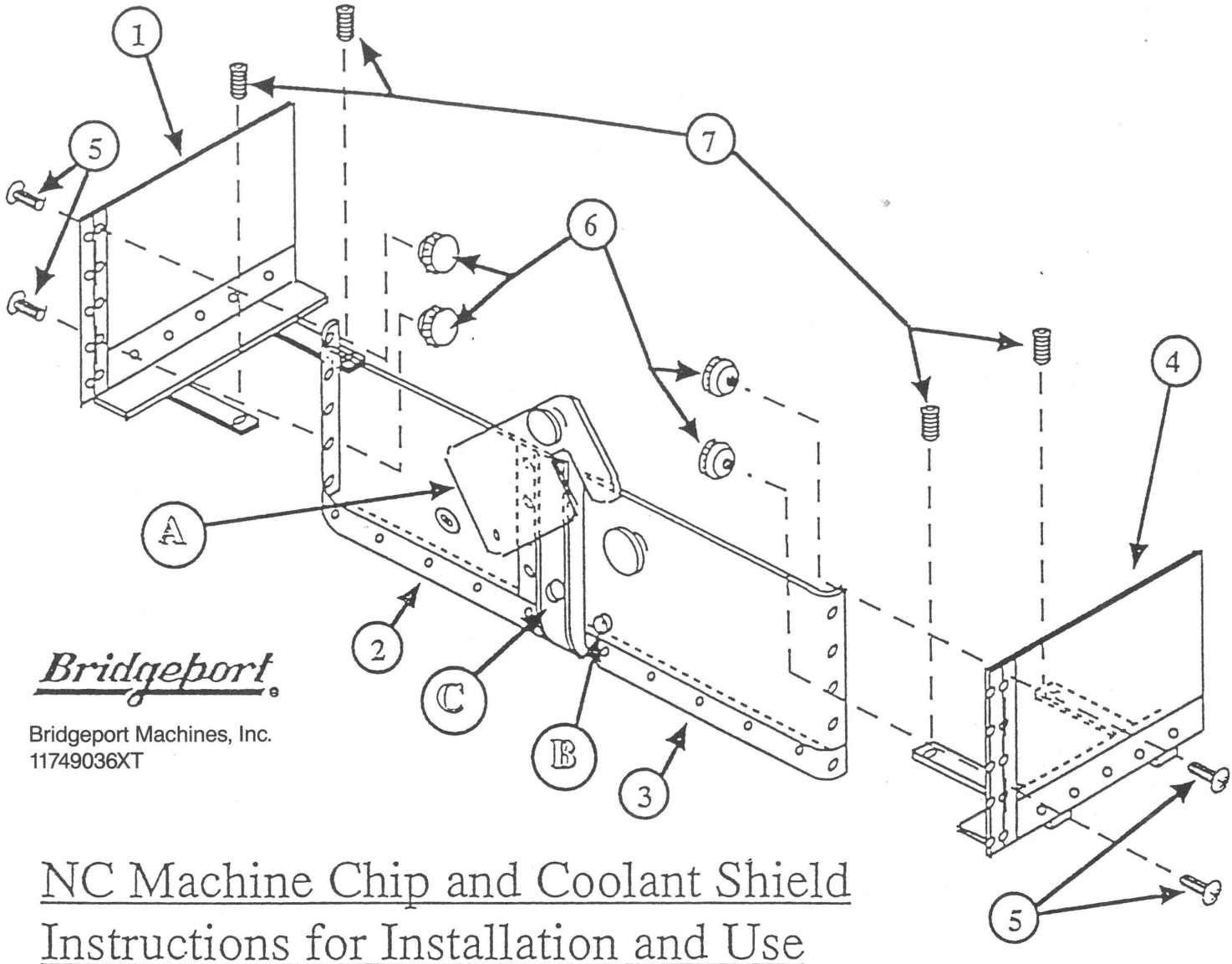
31. Keep rotating cranks and handwheels well-lubricated and maintained. Do not remove safety springs.

32. Certain materials, such as magnesium, are highly flammable in dust and chip form. See your supervisor before working with these materials.

33. PREVENT fire. Keep flammable liquids and materials away from work area and hot chips.

34. PREVENT machine from moving unexpectedly. Disengage power feed when not being used (manual machines only).

35. PREVENT machine from moving unexpectedly. Always start machine in manual mode.



Bridgeport

Bridgeport Machines, Inc.
11749036XT

NC Machine Chip and Coolant Shield Instructions for Installation and Use

WARNING

TO PREVENT SERIOUS INJURY:

1) Shut off the machine before installing this shield.
2) Observe all instructions and accident prevention signs.
3) Always use proper point of operation guarding when operating this machine.

1. Remove shield from carton. Using parts 5 & 6, assemble Part 1 to Part 2 and Part 3 to Part 4.

2. Slide the left side assembly (parts 1 and 2) into T-slots on the left side of the table.

3. Slide the right side assembly (parts 3 and 4) into T-slots on the right side of the table.

4. Adjust the two assemblies until the front panels (2 and 3) meet evenly at the center of the table. Align guide pin (B) with guide pin hole (C). Doors should be locked by dropping the latch (A) over the knob on the front right panel (3).

5. With latch (A) closed and shield in position, tighten the four set screws (part 7) securely.

6. The two front panels (parts 2 and 3) can be moved up to accomodate oversized workpieces and fixtures as follows: remove relocating knobs (part 5), move front panels (parts 2 and 3) to required position and replace relocating knobs. Note that the two front panels must be set at the same height to work the latch properly.

Instructions continue on back.

7. IMPORTANT SAFETY NOTICE

CAUTION

Bridgeport Machines supplies a safety shield for protection from chips and coolant with every machine we ship.

The Bridgeport chip and coolant shields have been designed with the highest clear impact material commercially available: Polycarbonate (G.E. LEXAN). It has an impact strength 5 to 10 times greater than acrylic (plexiglass) or Butyrate (UVEX) materials, thereby offering the greatest protection for our customers.

Some of the new "easy to dispose of" coolants and/or cutting oils contain chemicals harmful to Polycarbonate. These chemicals are: Mono-Ethanolamine, Di-Ethanolamine, Tri-Ethanolamine or the combination thereof. THESE CHEMICALS MAY SIGNIFICANTLY REDUCE THE IMPACT STRENGTH OF THE SHIELD WITHIN DAYS, AND COULD DESTROY THE ENTIRE SHIELD IN WEEKS.

USE OF COOLANTS AND/OR CUTTING OILS CONTAINING THESE CHEMICALS WILL VOID THE WARRANTY ON YOUR BRIDGEPORT SHIELD, AND COULD CAUSE INJURY TO YOUR WORKERS.

8. SPECIAL NOTE FOR MACHINES WITH PENDANT CONTROLS:

CAUTION

To prevent contact between the shield and the control box, the pendant must be swung back when the table is set at the upper end of the Z-axis.

9. SPECIAL NOTE FOR MACHINES WITH TOOL CHANGERS:

CAUTION

To prevent contact between the tool changer arm and the shield side panel, tool changes must be confined to a specified table area. refer to your programming manual for details.

10.

WARNING

This shield may be inappropriate and cannot be utilized for all possible applications of the machine. To prevent serious injury, use additional or alternate protection where this shield is not appropriate or cannot be utilized.

11. CLEANING

Do not use solvents or abrasive type cleaning agents. For best results use mild soap and water or a mild detergent (Ivory) and water.

TABLE OF CONTENTS

CHAPTER	DESCRIPTION	PAGE
	FOREWORD	
	INTRODUCTION	iii
1	MACHINE COMPONENTS	1-1
	1.1 MACHINE ASSEMBLY — FRONT	1-1
	1.2 MACHINE ASSEMBLY — SIDE VIEW	1-2
	1.3 ELECTRICAL COMPONENT LAYOUT WITH CABLES	1-3
2	POWER DISTRIBUTION	2-1
	2.1 CONTROL ENCLOSURE ASSEMBLY	2-1
	2.1.1 EQUIPMENT PANEL ASSEMBLY	2-2
3	AXIS DRIVES	3-1
	3.1 DOOR ASSEMBLY	3-1
	3.1.1 COMPUTER PANEL ASSEMBLY	3-1
	3.1.2 EQUIPMENT PANEL ASSEMBLY	3-2
	3.1.3 DRIVE POWER SUPPLY ASSEMBLY	3-3
	3.1.4 EQUIPMENT POWER M.S.I. DRIVE MODULE ASSEMBLY	3-4
4	CONTROL SYSTEM	4-1
	4.1 CRT HOUSING ASSEMBLY	4-1
	4.1.1 OPERATOR STATION	4-2
	4.1.2 OPERATOR STATION ASSEMBLY	4-3
5	MACHINE SYSTEM BREAKDOWN	5-1
	5.1 BASE ASSEMBLY PARTS LIST	5-1
	BASE ASSEMBLY PARTS LIST	5-2
	BASE ASSEMBLY SHEET 1	5-3
	BASE ASSEMBLY SHEET 2	5-4
	BASE ASSEMBLY SHEET 3	5-5
	BASE ASSEMBLY SHEET 4	5-6
	5.2 HEAD ASSEMBLY PARTS LIST	5-7
	HEAD ASSEMBLY PARTS LIST	5-8
	HEAD ASSEMBLY SHEET 1	5-9
	HEAD ASSEMBLY SHEET 2	5-10
	HEAD ASSEMBLY PARTS 3	5-11
	5.3 PNEUMATIC SPEED CHANGER	5-12
	PNEUMATIC SPEED CHANGER PARTS LIST	5-13
	5.4 LIMIT SWITCH PARTS GROUP	5-14
	5.5 PNEUMATIC BRAKE ASSEMBLY	5-15
	5.6 SPINDLE ASSEMBLY	5-16
	5.6.1 #30 Q.C. SPINDLE ASSEMBLY	5-16
	5.6.2 #200 UNIVERSAL SPINDLE ASSEMBLY	5-17
6	AUXILIARIES SYSTEM	6-1
	6.1 WAY LUBRICATION AND PUMP ASSEMBLY	6-1
	6.1.1 WAY LUBRICATION SYSTEM	6-2
	10-WAY JUNCTION LUBE SYSTEM	6-2
	BALLSCREW HOUSING LUBE	6-2
	BASE ASSEMBLY LUBE	6-2
	QUILL HOUSING ASSEMBLY LUBE	6-2
	HEAD ASSEMBLY LUBE	6-2
	SADDLE LUBE	6-2
	6.2 LUBE MIST AND PNEUMATICS	6-4

TABLE OF CONTENTS (CONTINUED)

CHAPTER	DESCRIPTION	PAGE
7	**OPTIONAL EQUIPMENT**	**7-1**
	7.1 BASE AND FILTER ASSEMBLY	7-1
	7.1.1 BASE PAN KIT	7-1
	7.2 FLOOD COOLANT PUMP AND MOTOR	7-2
	7.2.1 FLOOD COOLANT, NOZZLE/HEAD/1 HEAD (Tank on Front)	7-3
	7.3 NOZZLE ASSEMBLIES (Flood and Mist)	7-3
	7.4 MIST TANK ASSEMBLY	7-4
	7.5 POWER DRAWBAR KIT	7-5
8	**SPARE PARTS**	**8-1**
	2.1.1 POWER EQUIPMENT ASSEMBLY	8-1
	3.1.3 DRIVE POWER SUPPLY ASSEMBLY	8-1
	4.1 OPERATORS CONTROL PANEL ASSEMBLY	8-1
	4.1.1 OPERATORS STATION ASSEMBLY	8-1
	5.1 BASE ASSEMBLY	8-1
	5.2 HEAD ASSEMBLY	8-1
	5.3 PNEUMATIC SPEED CHANGER	8-1
	6.1 WAY LUBRICATION TANK AND PUMP ASSEMBLY	8-1
	7.1 INDEX CONTROL KIT	8-1
	7.1.1 BASE PAN KIT	8-1

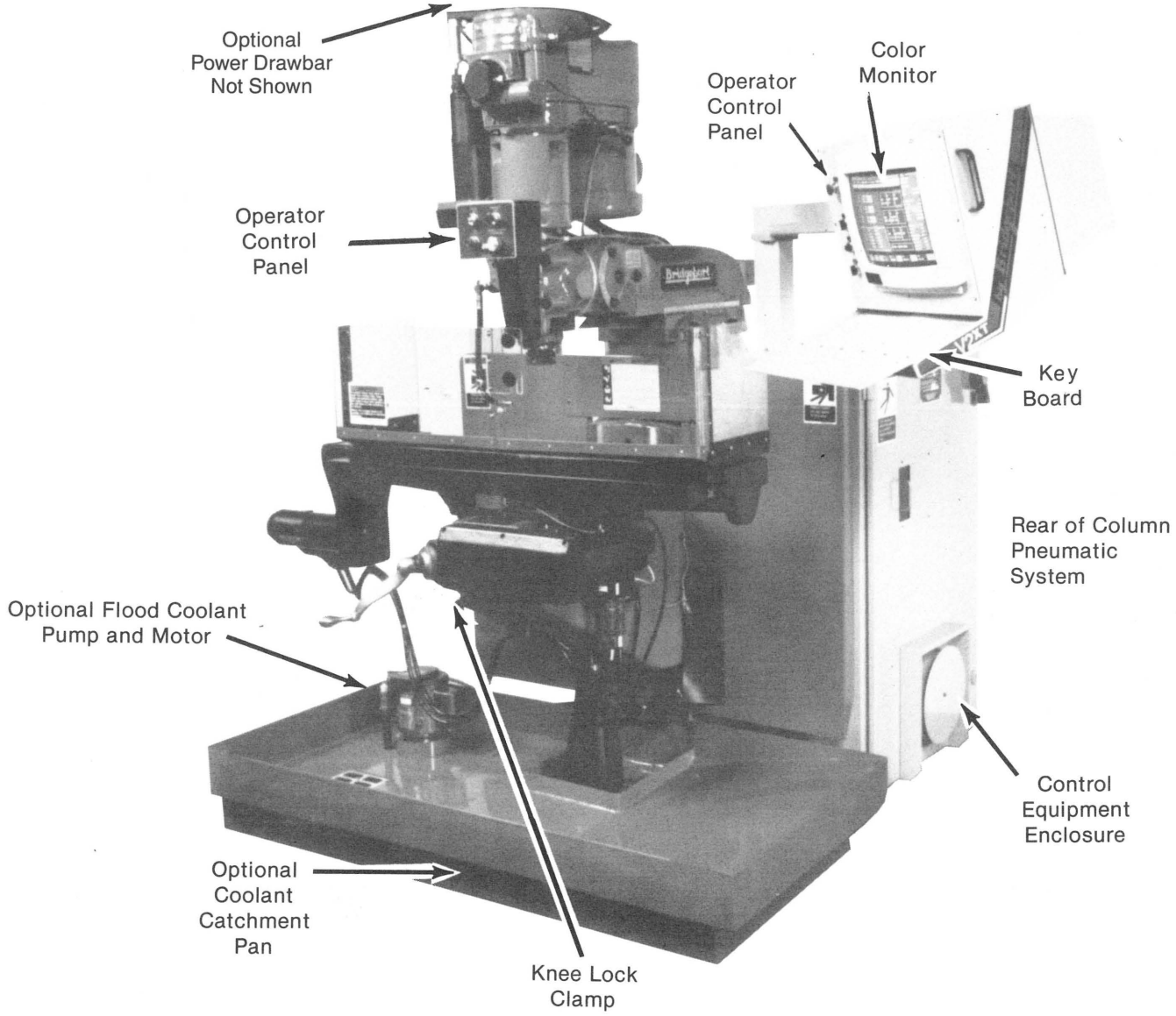
LIST OF TABLES

TABLE	DESCRIPTION	PAGE
2-1	FUSE CHART	2-3
2-2	CARD COMPLEMENT	2-3
2-3	LINE VOLTAGE/FREQUENCY PARTS	2-4
2-4	VOLTAGE CONVERSION KITS	2-4
2-5	OVERLOAD HEATERS	2-4
2-6	INTERFACE CABLES TO PERIPHERAL EQUIPMENT	2-4

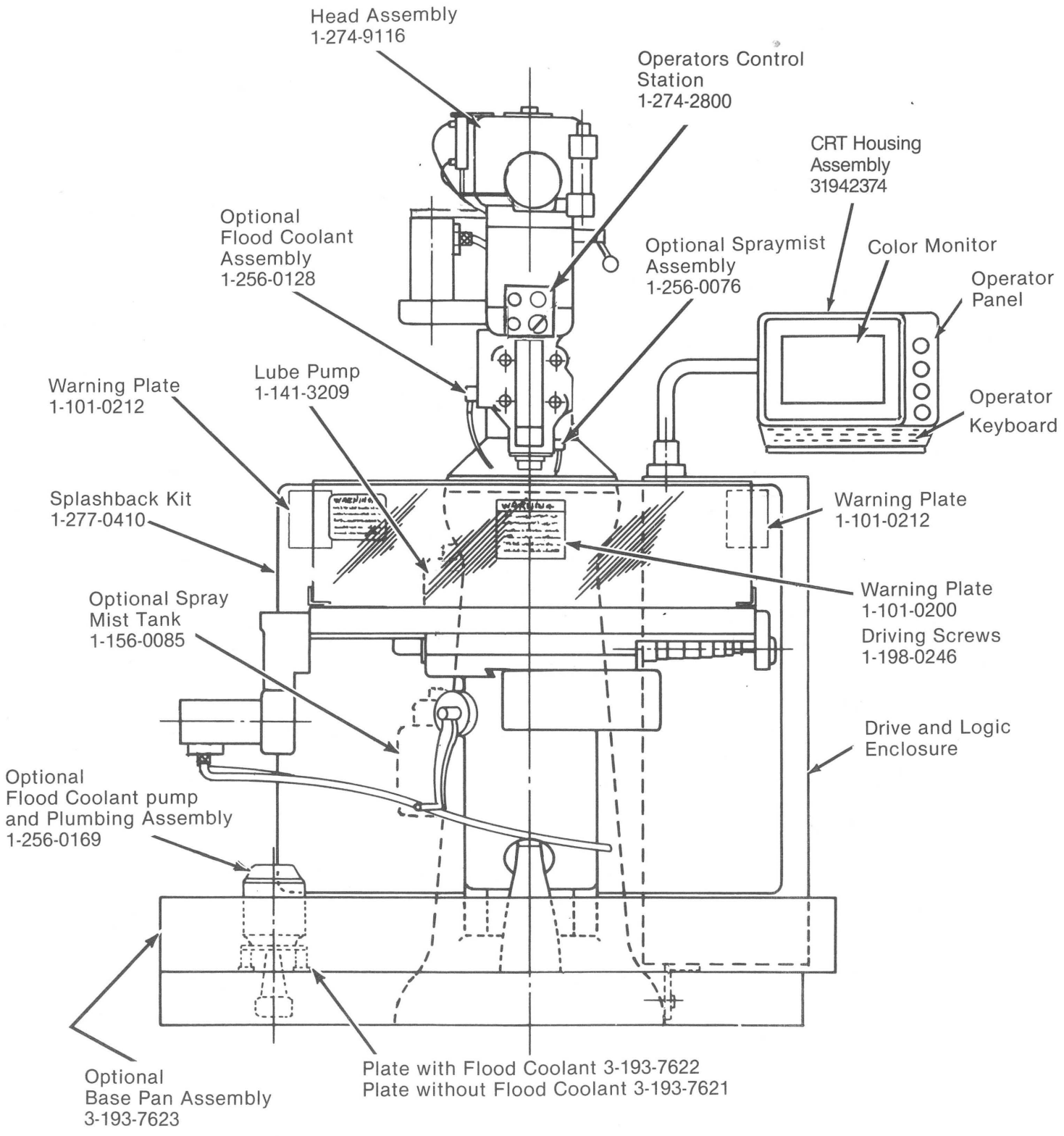
INTRODUCTION

The purpose of this manual is to provide the information necessary to find and identify parts by part number quickly and easily. This manual is one in a series of manuals that provides the instructions for proper operation, programming, installation and maintenance of the V2XT machine system. The manuals are:

Description	Code No.
Operating Manual	11042513
Programming Manual	11041067
Installation & Maintenance	11042516
Parts Manual	11042517
Chip and Coolant Shield	11749036XT



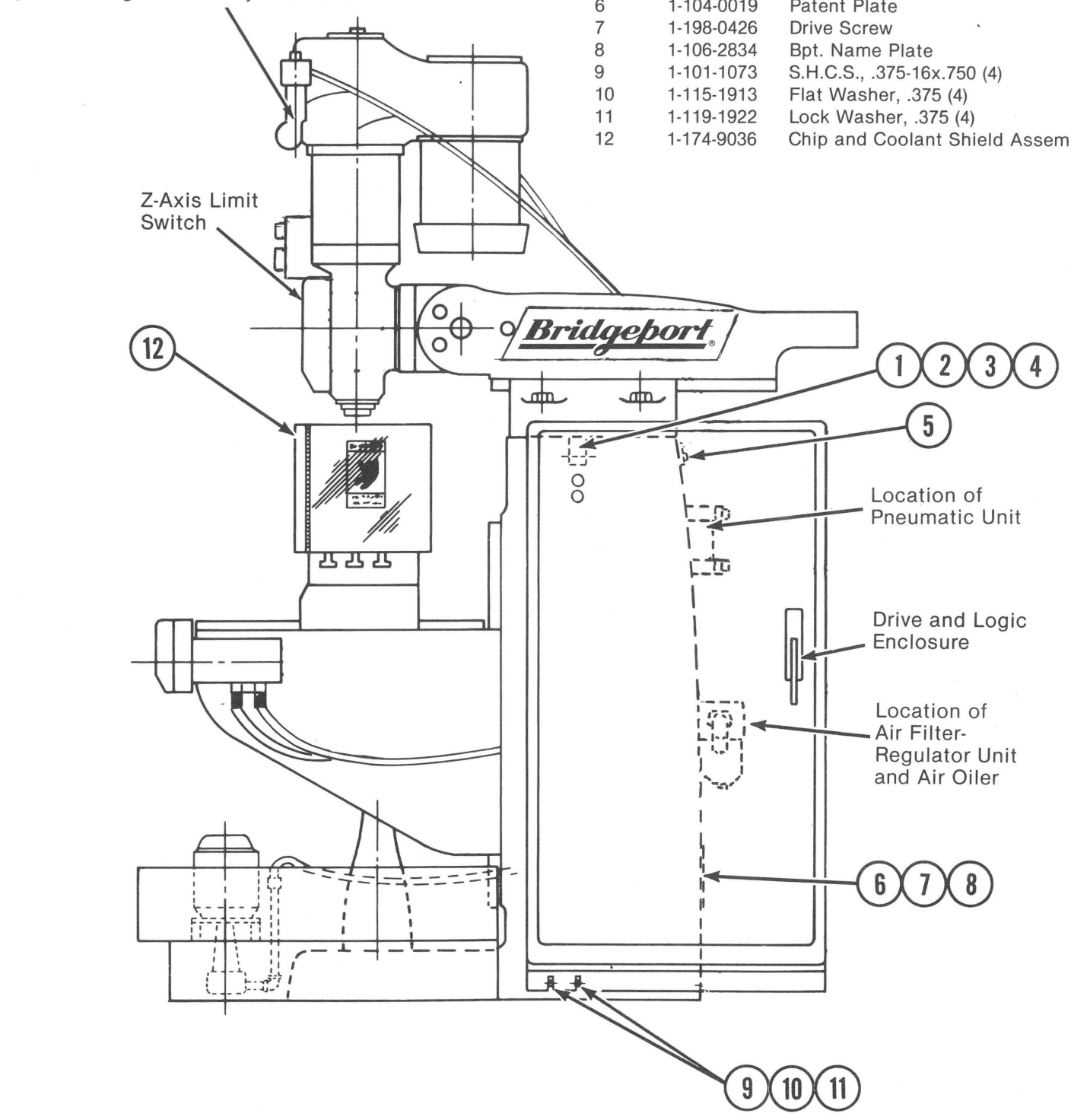
CHAPTER 1
MACHINE COMPONENTS



1.1 Machine Assembly — Front View

1.2 MACHINE ASSEMBLY — SIDE VIEW

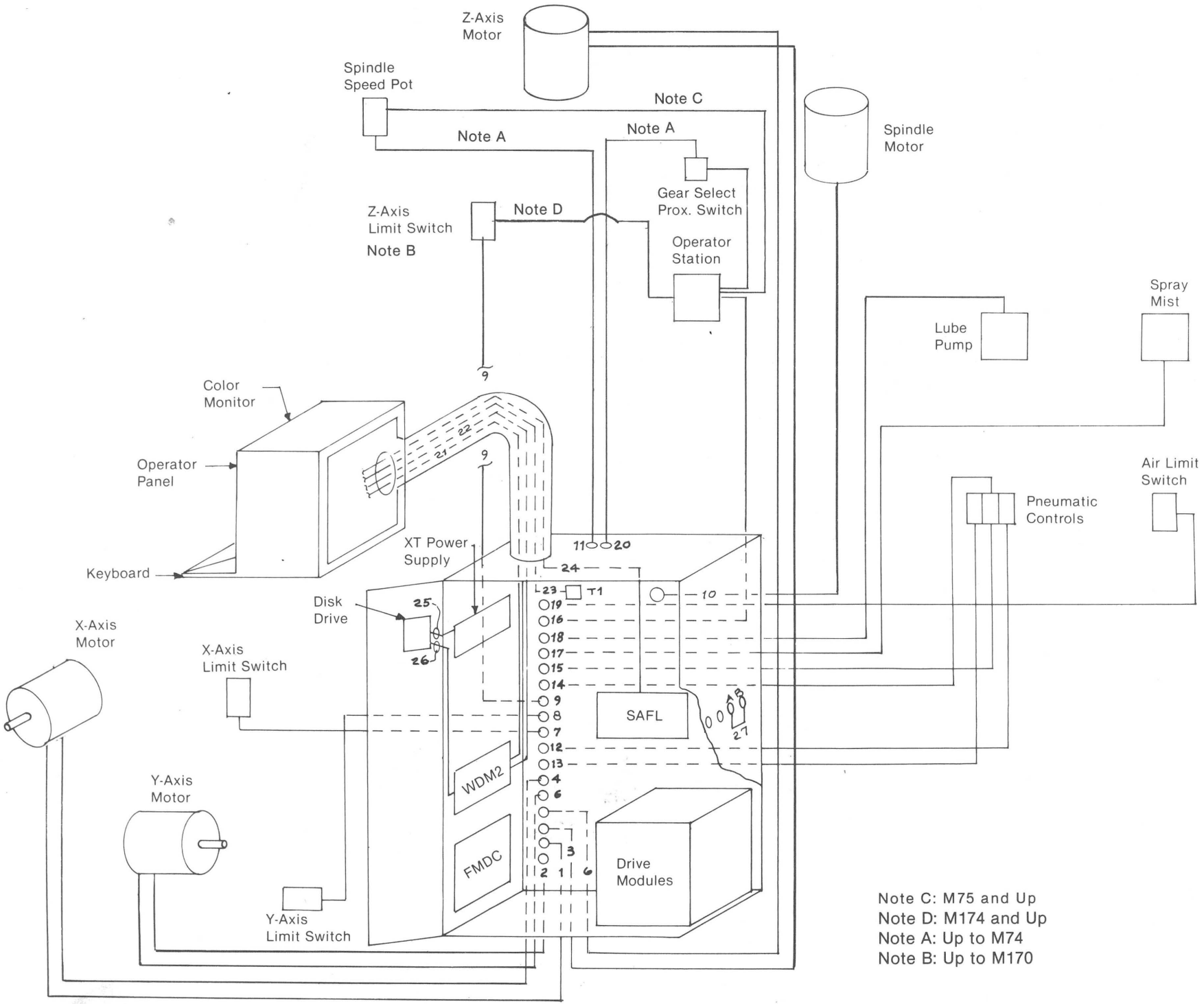
Item	Code No.	Description
1	1-101-1138	H.H.C.S., .250-20x.750 (2)
2	1-101-1707	Hex Nut, .25-20 (2)
3	1-111-1912	Flat Washer, .250 (4)
4	3-192-7820	Bracket Assembly
5	1-101-1033	S.H.C.S., .25-20x.750 (2)
6	1-104-0019	Patent Plate
7	1-198-0426	Drive Screw
8	1-106-2834	Bpt. Name Plate
9	1-101-1073	S.H.C.S., .375-16x.750 (4)
10	1-115-1913	Flat Washer, .375 (4)
11	1-119-1922	Lock Washer, .375 (4)
12	1-174-9036	Chip and Coolant Shield Assembly



1.2 Machine Assembly — Side View

1.3 ELECTRICAL COMPONENT LAYOUT WITH CABLES 3-194-2575

Item	Code No.	Description
1	3-194-0961	X-Axis Motor Cable
2	3-194-0962	Y-Axis Motor Cable
3	3-194-0963	Z-Axis Motor Cable Up to M170
4	3-194-0964	X-Axis Signal Cable Up to M268
4A	3-194-2560	X-Axis Signal M269 & Up
5	3-194-0965	Y-Axis Signal Cable Up to M268
5A	3-194-2561	Y-Axis Signal M269 & Up
6	3-194-0966	Z-Axis Signal Cable Up to M268
6A	3-194-2562	Z-Axis Signal M269 & Up
7	3-194-0967	X-Axis Limit Switch Cable
8	3-194-0968	Y-Axis Limit Switch Cable
9	3-194-0969	Z-Axis Limit Switch Cable Up to M170
10	3-194-0977	Spindle Motor Cable
11	3-194-0979	Spindle Pot Cable Up to M74
11A	3-194-1270	Spindle Pot Cable M75 and Up
12	3-194-0095	Index Table Cable (Optional) Up to M268
13	3-194-0970	Spindle Brake Cable
14	3-194-0971	Spindle Speed Increase Cable
15	3-194-0972	Spindle Speed Decrease Cable
16	3-194-1132	Operator Station Cable Up to M170
16A	3-194-2203	Operator Station Cable M170 and Up
17	3-194-0973	Spray Mist Cable
18	3-194-0974	Lube Pump Cable
19	3-194-0976	Air Limit Switch Cable
20	3-194-0051	Gear Select Proximity Switch Cable Up to M94
20A	3-194-1271	Gear Select Proximity Switch M75 and Up
21	3-194-0984	Keyboard Cable
22	3-194-0982	Video Cable Up to M268
22A	3-154-2294	Video Cable M269 & Up
23	3-194-0983	Power Cord Cable Up to M268
24	3-194-0980	Operator Panel Cable
25	3-194-1036	Disk Drive Power Cable Up to M268
25A	3-194-2600	Disk Drive Power M269 & Up
26	3-194-0998	Computer Ribbon Cable Up to M268
26A	3-194-2488	Computer Ribbon Cable M269 & Up
27	3-194-1033	A/B Jumper Cable Up to M268
27A	3-194-2473	Terminator Plug M269 & Up
28	3-194-2489	Printer Cable M269 & Up

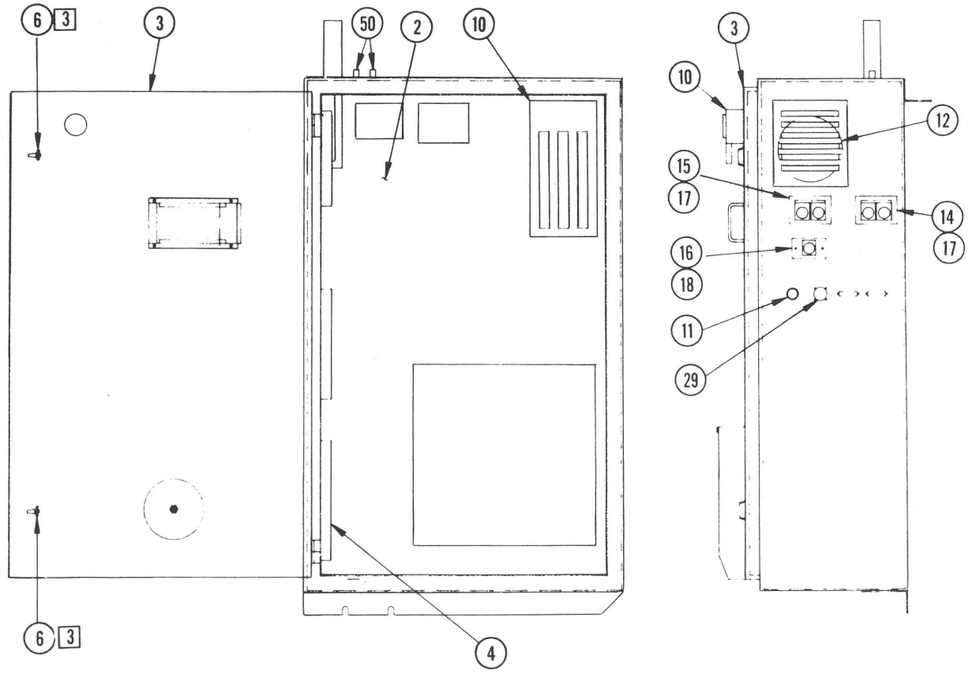

Z-Axis Motor
Spindle Speed Pot
Note C
Note A
Note A
Spindle Motor
Gear Select Prox. Switch
Z-Axis Limit Switch
Note B
Note D
Operator Station
Spray Mist
Lube Pump
Color Monitor
Operator Panel
Air Limit Switch
Pneumatic Controls
XT Power Supply
Keyboard
Disk Drive
X-Axis Motor
X-Axis Limit Switch
SAFL
WDM2
Y-Axis Motor
FMDC
Drive Modules
Y-Axis Limit Switch
Note C: M75 and Up
Note D: M174 and Up
Note A: Up to M74
Note B: Up to M170

CHAPTER 2

POWER DISTRIBUTION

2.1 CONTROL ENCLOSURE ASSEMBLY — Dwg. 3-194-1023

Item	Code No.	Description			
		3-194-1023	3-194-1261 or 3-194-2213	3-194-2213	3-142-579
		Up to Machine 74	Machine 75-170	Machine 170T0268	M269 & Up
2	3-194-1024	Equipment Panel Assembly	3-194-1257 or 3-194-1183	1941183	194-2476
3□	3-194-1025	Door Assembly	3-194-1265	3-194-1265	194-2583
6	3-154-1864	Latch Assembly	×	×	×
4	3-194-1026	Computer Panel Assembly	3-194-1184	3-194-1184	194-2580
10	3-154-2045	Disconnect Switch Assembly	×	×	×
11	3-150-4020	Reset Switch	×	×	×
12	3-150-7946	Fan	×	×	×
14	3-150-3767	Duplex Receptacle Misc. Functions	×	×	×
15	3-159-3733	Duplex Receptacle Work Light	×	×	×
16	3-150-7297	Receptacle Flood Coolant	×	×	×
17	3-150-3332	Duplex Receptacle Cover (2)	×	×	×
18	3-150-7298	Receptacle Cover	×	×	×
29	3-150-6080	Index Connector Cap	×	×	×
50	3-150-6168	Connector Cap (2)	Not Installed	Not Installed	Not Installed
	×	Code No. Remains the same			

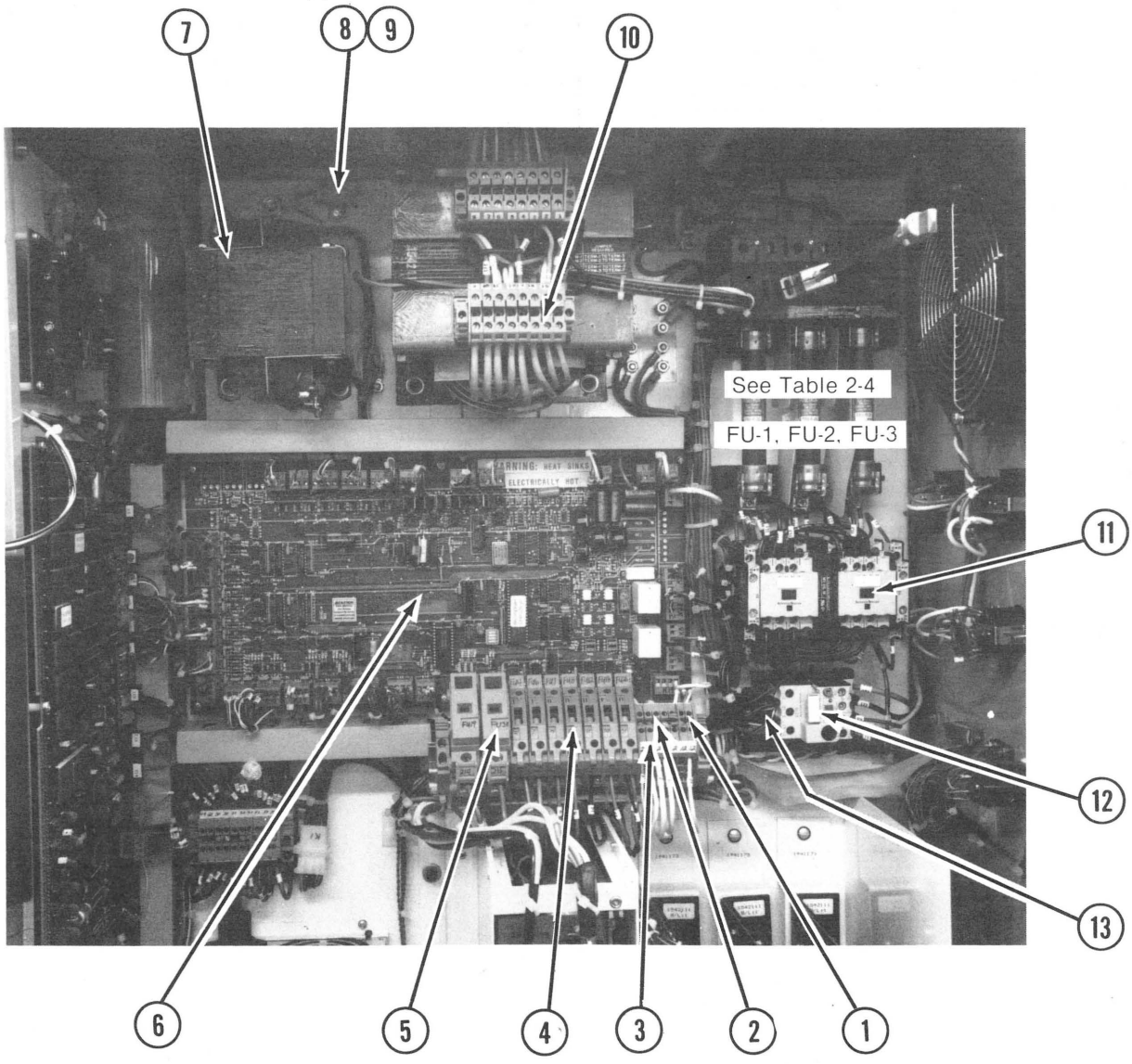


2.1 CONTROL ENCLOSURE ASSEMBLY — Dwg. 3-194-1023

POWER DISTRIBUTION

2.1.1 EQUIPMENT PANEL ASSEMBLY — Dwg. 3-194-2476
(TOP HALF)
MACHINE #269 AND UP

Item	Code No.	Description
1	3-150-8133	Jumper Bar (2 Poles)
2	3-150-8862	Jumper Bar
3	3-150-8130	Terminal Block (7)
4	3-150-9942	Fuse Block (8)
5	3-150-9943	Fuse Block (2)
6	3-194-1000	SAFL Board Assembly
7	3-154-1865	Transformer, 500 VA, Pwr, 50/60 HZ (T1) 1PH, 208 / 230 / 460 VAC
8	3-154-0960	Capacitor, 2PF, 320 VAC 50/60 HZ
9	3-150-2030	Resistor 200 ohm, 5W, 5%
10	3-154-2113	Transformer, Drive (T2)
11	3-154-2046	Relay, Starter Reversing
12	3-154-2047	Relay, Overload 208 / 230 VAC
	3-154-2050	Relay, Overload 460 VAC
13	3-150-4677	ARC Suppressor O.1MF + 100 OHMS + 250 VAC (3)

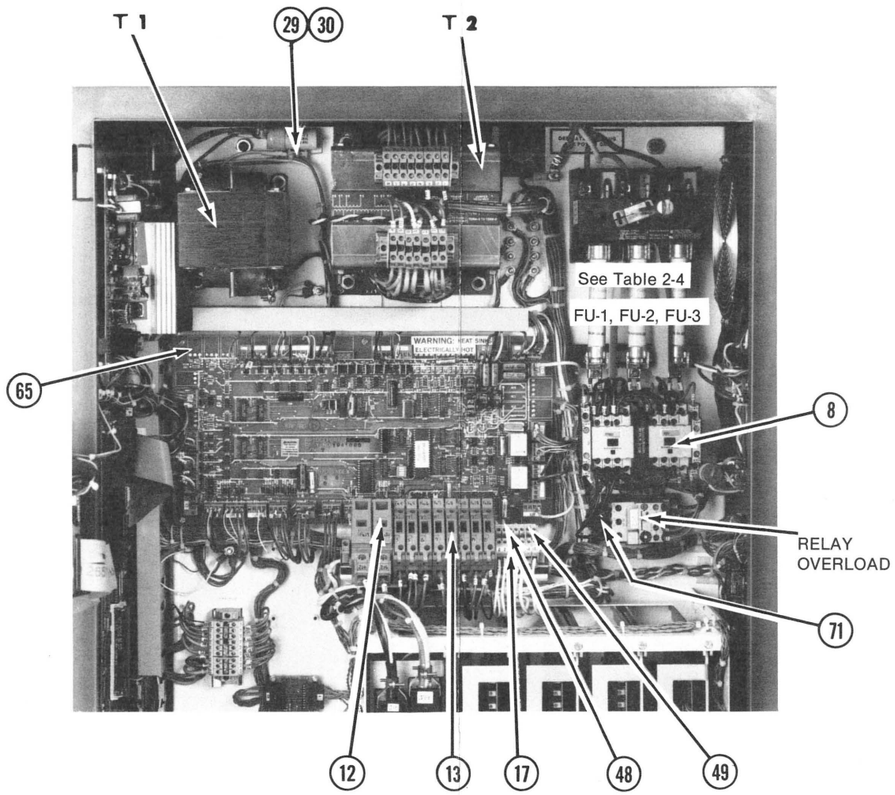


2.1.1 EQUIPMENT PANEL ASSEMBLY — Dwg. 3-194-2476
(TOP HALF)

POWER DISTRIBUTION

2.1.1 EQUIPMENT PANEL ASSEMBLY — Dwg. 3-194-1024
UP TO MACHINE #268
(TOP HALF)

Item	Code No.	Description
	3-154-1865	Transformer
	3-154-2113	Transformer, Drive
	3-154-2047	Relay Overload (200-230VAC)
	3-154-2050	Relay Overload (380-440VAC)
8	3-154-2046	Starter Reversing
12	3-150-9943	Fuse Block (2)
13	3-150-9942	Fuse Block (8)
17	3-150-8130	Terminal Block (7)
29	3-154-0960	Capacitor 2PF, 320VAC, 50/60HZ
30	3-150-2030	Resistor 200 ohm, 5W, 5%
48	3-150-8862	Jumper Bar
49	3-150-8133	Jumper Bar (2 Poles)
65	3-194-1000	SAFL Board Assembly
71	3-150-4677	ARC Suppressor 0.1MF + 100 ohms + 250 VAC (3)



2.1.1 EQUIPMENT PANEL ASSEMBLY — Dwg. 3-194-1024
(TOP HALF)

POWER DISTRIBUTION

2.1.1 EQUIPMENT PANEL ASSEMBLY — Dwg. 3-194-2476
(TOP HALF)
MACHINE #269 AND UP

Item	Code No.	Description
1	3-150-8133	Jumper Bar (2 Poles)
2	3-150-8862	Jumper Bar
3	3-150-8130	Terminal Block (7)
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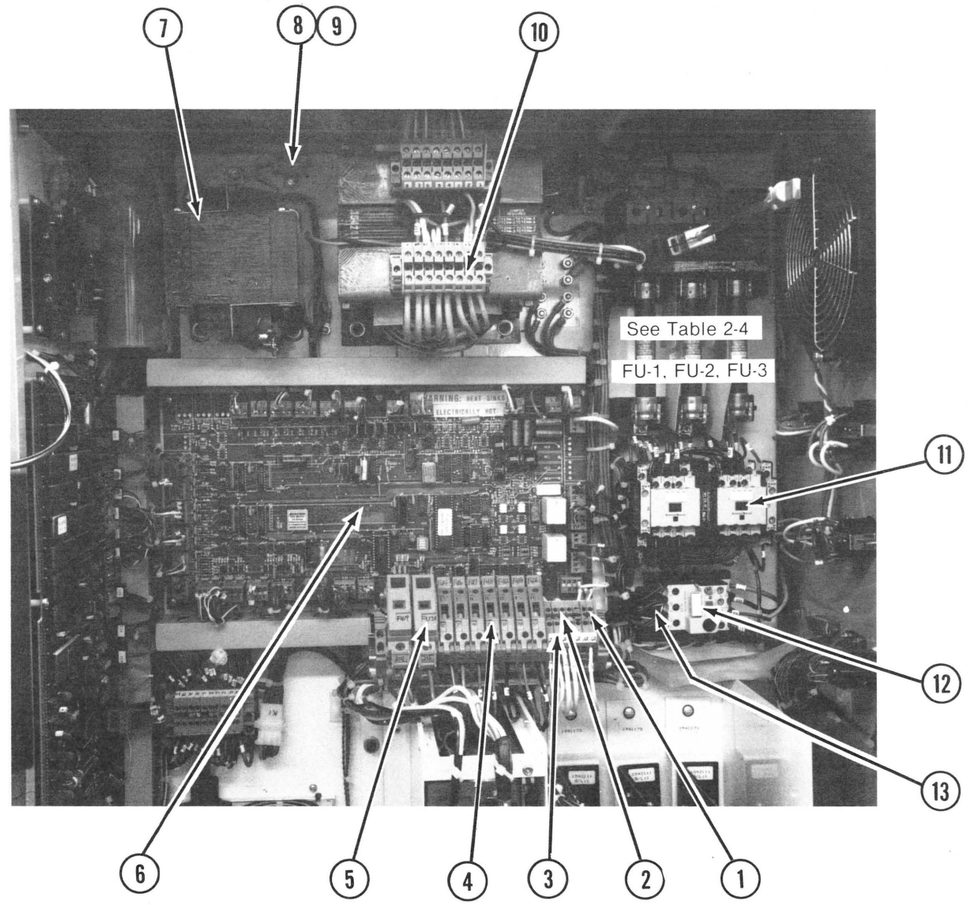
5	3-150-9943	Fuse Block (2)
6	3-194-1000	SAFL Board Assembly
7	3-154-1865	Transformer, 500 VA, Pwr, 50/60 HZ (T1) 1PH, 208 / 230 / 460 VAC
8	3-154-0960	Capacitor, 2PF, 320 VAC 50/60 HZ
9	3-150-2030	Resistor 200 ohm, 5W, 5%
10	3-154-2113	Transformer, Drive (T2)
11	3-154-2046	Relay, Starter Reversing
12	3-154-2047	Relay, Overload 208 / 230 VAC
	3-154-2050	Relay, Overload 460 VAC
13	3-150-4677	ARC Suppressor O.1MF + 100 OHMS + 250 VAC (3)



2.1.1 EQUIPMENT PANEL ASSEMBLY — Dwg. 3-194-2476
(TOP HALF)

POWER DISTRIBUTION

Table 2.1 FUSE CHART

FUSE	DESCRIPTION	PART NUMBER	CIRCUIT IT PROTECTS
1,2,3	FRS, 20A, 600V	3-150-8736	Line Voltage — 208/230 VAC
1,2,3	FRS, 15A, 600V	3-150-8735	Line Voltage — 380 VAC
1,2,3	FRS, 10A, 600V	3-150-8734	Line Voltage — 460 VAC
4	MDA, 3A, 250V	3-150-3868	Power Transformer T2 Secondary
5	MDA, 1A, 250V	3-150-8888	Fans, Axis Drive Enclosure
6	MDA, 5A, 250V	3-150-8851	Power to the Duplex Receptacle
7	MDA, 6A, 250V	3-150-8852	Power to Flood Receptacle
8	MDA, 1A, 250V	3-150-8888	Power to Spray Mist Solenoid
12	MDX, 3A, 250V	3-150-3868	Auxiliary Power Supply +24V to Limit, Operator Switches, SAF Board
13	MDA, 5A,250V	3-150-8851	+3H4 Wiring Diagram
17	MDA, 1.5A, 250V	3-150-3869	DPS Board (−22 VDC)
18	MDA, 1A, 250V	3-150-8888	CR4 Solenoid
19	FNW, 25, 250V	3-154-1648	Drive Power Supply
20	FNW, 25A, 250V	3-154-1648	Drive Power Supply
23	MDA, 25A, 250V	3-150-9958	Motor Drive Module
24	MDA, 25A, 250V	3-150-9958	Motor Drive Module
25	MDA, 25A, 250V	3-150-9958	Motor Drive Module
26	MDA, 1A, 250V	3-150-8888	Fans Control Enclosure
27	GDA, 3.15A, 250V	3-154-2105	Color Monitor
28	GDA, 5A, 250V	3-154-2111	Power Supply

TABLE 2.2 CARD COMPLEMENT

Board Name	Code No.	Schematic	Location	Code No.
	Up to M268			M269 & Up
Color Monitor	3-154-2044		CRT Housing Assy.	194-2377
SAFL	3-194-1000	3-194-1042	Equipment Panel Assy.	×
DMB3	3-194-0960		Motor Drive Assy.	—
FPU	3-194-1006	3-194-1022	Equipment Panel Assy.	×
Motor Drive Module Assy.	3-194-1109		Motor Drive Assy.	—
DCS	3-193-6628	3-193-9626	Motor Drive Assy.	—
HBD	3-193-6478	3-193-6447	Motor Drive Assy.	—
FMDC	3-194-1004	3-194-1021	Equipment Panel Assy.	194-2581
RSRS	3-193-9964	3-193-9962	Equipment Panel Assy.	—
IFC and DPS Module Assy.,	3-193-8000		Motor Drive Assy.	—
IFC	3-193-7862	3-193-7860	Motor Drive Assy.	—
DPS	3-193-7784	3-193-7783	Motor Drive Assy.	—
XT Power Supply	3-194-1111		Computer Panel Assy.	194-2577
WD286	3-154-2041		Computer Panel Assy.	194-2472
Key Board	3-154-2037		CRT Housing Assy.	×
Motor Power Supply	3-193-9893		Equipment Panel Assy.	×
Motor Drive Module	3-194-1171		Equipment Panel Assy.	×

POWER DISTRIBUTION

TABLE 2.3 LINE VOLTAGE/FREQUENCY PARTS

	208/3/60	230/3/60	460/8/60
Line Fuse	FRS 20A, 600V	FRS 20A, 600V	FRS 10A, 600V
FU 1,2,3	3-150-8736	3-150-8736	3-150-8736
Mol.	3-154-2047	3-154-2047	3-154-2050
Spindle Motor	1-177-0101	1-177-0101	1-177-0101
T1 (500 VA)	3-154-1865	3-154-1865	3-154-1865
T2 (3.5 KVA)	3-194-0031	3-194-0031	3-194-0031

TABLE 2.4 VOLTAGE CONVERSION KITS

Built	Convert	Kit Code No.	
		Up to M170	M171 & Up
460/3/60	230/3/60	3-194-1154	3-194-2215
230/3/60	460/3/60	3-194-1153	3-194-2214
208/3/60	460/3/60	3-194-1153	3-194-2214
208/3/60	230/3/60	Not Required	—
460/3/60	208/3/60	3-194-1154	3-194-2215
230/3/60	208/3/60	Not Required	—

TABLE 2.5 OVERLOAD HEATERS

Line Voltage	Klockner Moeller	Code No.
208V	Z 00-10	3-154-2047
230V	Z 00-10	3-154-2047
460V	Z 00-10	3-152-2050

TABLE 2.6 INTERFACE CABLES TO PERIPHERAL EQUIPMENT

Machine	Peripheral	Part No.	Description
FMDC	EZ-CAM	3-193-7349	RS-232, 25'
FMDC	TRS-80 (100)	3-143-7598	RS-232, 25'
Port B	EZ-CAM	3-168-2004	RS-232, 6'
Port B	EZ-CAM	3-193-4006	RS-232, 25'
Port B	EZ-CAM	3-193-4011	RS-232, 50'
Port B	EZ-FILE	Same as EZ-CAM	

CHAPTER 3
AXIS DRIVES

3.1 DOOR ASSEMBLY
3-194-1025 Up to Machine 74 — 3-194-1265 Machine 75 Up to Machine #268
(ITEM #3 ON CONTROL ENCLOSURE ASSEMBLY)

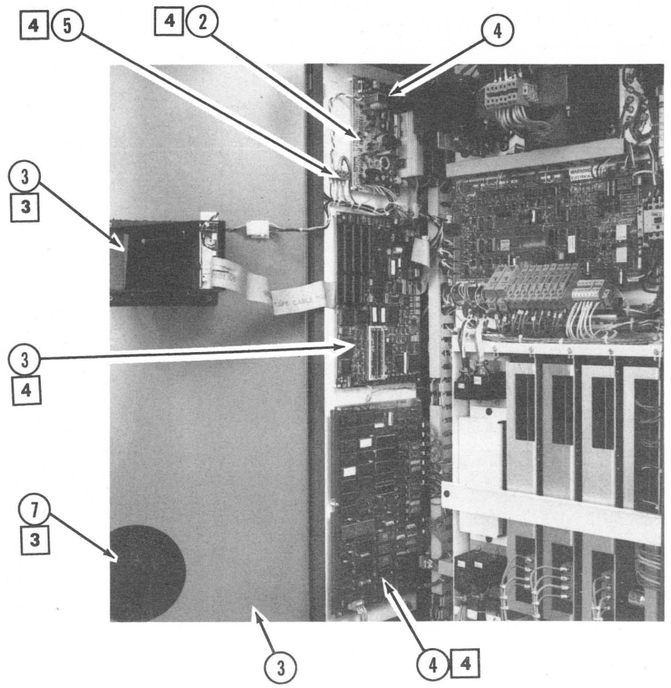
Item	Code No.	Description	
3	3-194-1020	Disk Drive Assembly	3-194-1229
7	3-154-2066	Filter	3-154-2066

NOTE

V2XT BOSS Software is Part #3-194-1125

3.1.1 COMPUTER PANEL ASSEMBLY — Dwg. 3-194-1026 or 1941184 UP TO MACHINE #268
(ITEM #4 ON CONTROL ENCLOSURE ASSEMBLY)

Item	Code No.	Description
2	3-194-1111	XT Power Supply Assembly
2A	3-194-1264	XT Power Supply Assembly
3	3-154-2041	WD286-WDM2 Assembly
4	3-194-1004	FMDC III Assembly
5	3-150-8621	Terminal Block



3-1 DOOR ASSEMBLY — DWG 3-194-1025 or 3-194-1265

3.1.1 COMPUTER PANEL ASSEMBLY — 3-194-1026 or 3-194-1184

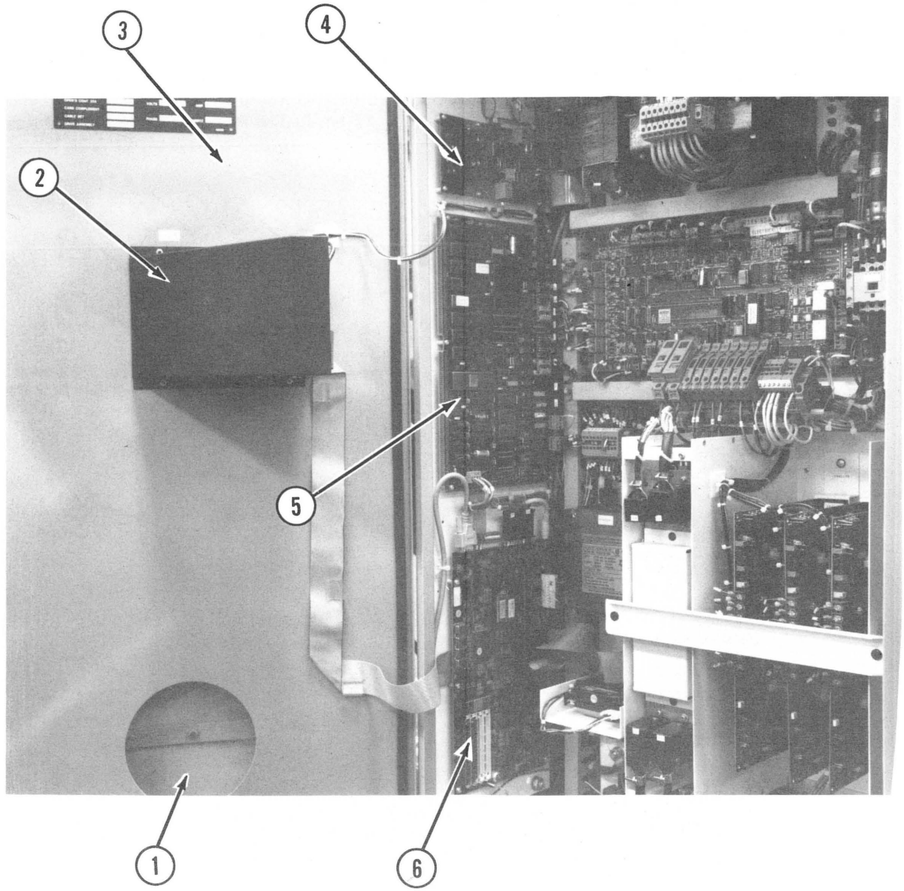
CHAPTER 3
AXIS DRIVES

3.1 DOOR ASSEMBLY
3-194-2583 Machine #269 and Up

Item	Code No.	Description
1	3-154-2066	Filter
2	3-194-2391	Disk Drive Assembly
3	3-194-2583	Door Assembly

3.1.1 COMPUTER PANEL ASSEMBLY
3-194-2580 MACHINE #269 AND UP

4	3-194-1006	FPU Board Assembly
	3-154-1179	With Battery
5	3-194-2581	FMDC Final Assembly
6	3-194-2472	WD286 LPM



3-1 DOOR ASSEMBLY — DWG 3-194-2583

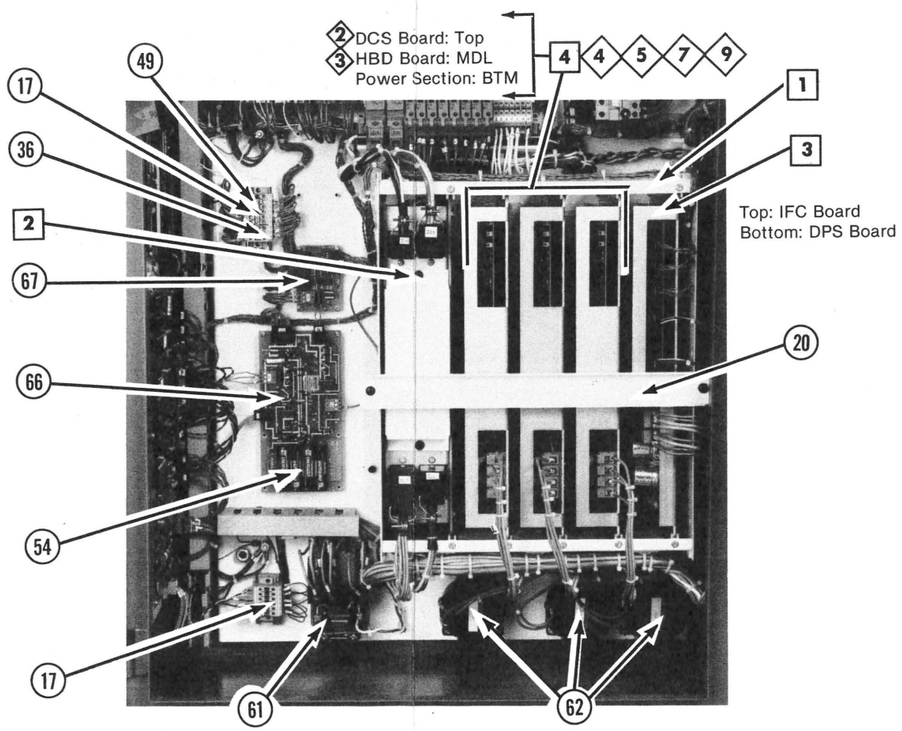
3.1.1 COMPUTER PANEL ASSEMBLY — 3-194-2304

AXIS DRIVES

3.1.2 EQUIPMENT PANEL ASSEMBLY — Dwg. 3-194-1024
(BOTTOM)

Item	Code No.	Description
17	3-150-8130	Terminal Block (15)
20	3-194-1109	Drive Assembly
1	3-194-1028	Card Rack Assembly
2	3-193-9893	Drive Power Supply Assembly
3	3-193-8000	IFC and DPS Module Assembly
4	3-193-7997	Motor Drive Assembly
2	3-193-6628	DCS Board
3	3-193-6478	HBD Board
4	3-154-0150	Q1, Q2 Transistor
5	3-191-8226	Current Transformer
7	3-154-1237	Capacitor 5 MFD ⁹ 200V
9	3-193-8137	Ribbon Cable Assembly (DCS to HBD)
36	3-150-8134	Jumper Bar Assembly (3 Pole)
49	3-150-8133	Jumper Bar (2 Pole) (2)
54	3-154-1179	A.A. Batteries (4)
61	3-154-1772	Contactor
62	3-154-1770	Inductor Coil (3)
66	3-194-1006	FPU Board Assembly
67	3-193-9964	RSRS Board Assembly

Legend:
○ Item Listed In Equip. Panel Assembly
□ Item Listed In Drive Assembly
◇ Item Listed In Motor Drive Module Assembly

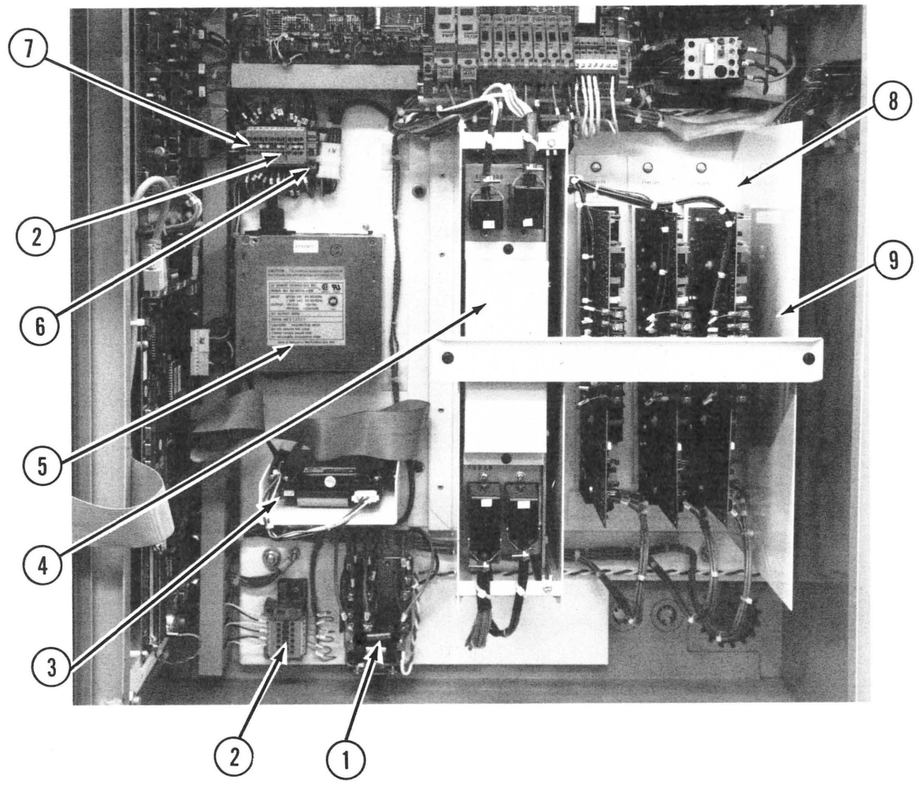


3.1.2 EQUIPMENT PANEL ASSEMBLY — Dwg. 3-194-1024

AXIS DRIVES

3.1.2 EQUIPMENT PANEL ASSEMBLY — Dwg. 3-194-2476
(BOTTOM)
MACHINE #269 AND UP

Item	Code No.	Description
1	3-154-1772	Contactor
2	1-150-8130	Terminal Block
3	3-194-2393	Enhanced Performance / Option /
4	3-193-9893	Drive Power Supply Assembly
5	3-194-2577	Power Supply Assembly / 200 Watt Modified /
6	3-150-8134	Jumper Bar (3 Pole)
7	3-150-8133	Jumper Bar (2 Pole) (2)
8	3-194-1172	Card Rack Assembly
9	3-194-1171	MSI Drive Assembly

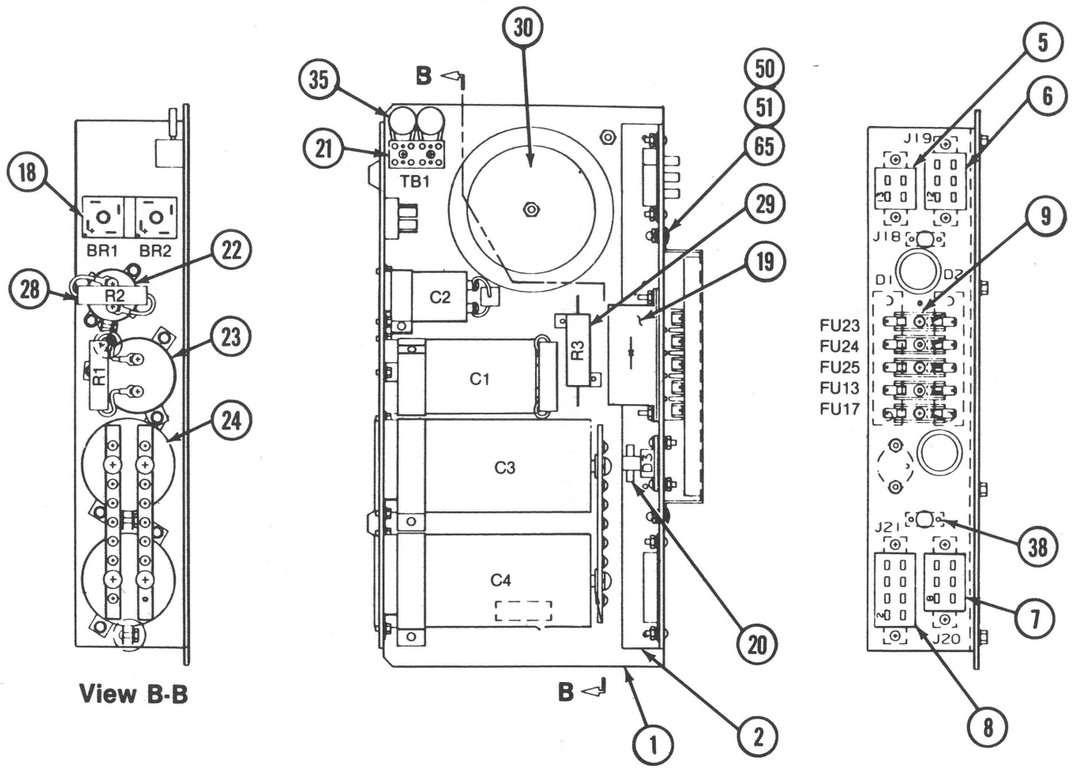


3.1.2. EQUIPMENT PANEL ASSEMBLY — Dwg. 3-194-2476

AXIS DRIVES

3.1.3 DRIVE POWER SUPPLY ASSEMBLY — Dwg. 3-193-9893

Item	Code No.	Description	Item	Code No.	Description
1	3-193-9879	Power Supply Mod. (Left Ang.)	22	3-154-1779	C-2 Capacitor, 6300MFD 40V
2	3-193-9880	Power Supply Mod. (Sub-Assy.)	23	3-154-1780	C-1 Capacitor, 24000MFD 40V
5	3-154-1783	Plug Connector (4 Pin)	24	3-154-0663	C-3, C-4 Capac., 5000MFD 200V
6	3-154-1784	Plug Connector (6 Pin)	28	3-154-0451	R-1, R-2 Res. 250ohm 15W 5%
7	3-154-1785	Socket Connector (6 Pin)	29	3-150-4840	R-3 Resistor 1K ohm 50W 3%
8	3-154-1786	Socket Connector (8 Pin)	30	3-154-1767	T-1 Transformer
9	3-154-1806	Fuse Block (5 Pole)	35	3-154-1619	QTM-1, QTM-2 Thermister
18	3-154-8110	BR-1, BR-2 Bridge Rectifiers	38	3-150-4981	Receptacle (2)
19	3-154-1781	D-1, D-2 Diodes	50	3-150-2885	Wear Washer
20	3-154-1796	D-3 Diode, 40A 300V	51	3-150-2884	Split Ring Retainer
21	3-154-0615	Terminal Block (4 Pole)	65	3-150-7657	Stud, .250 Turn



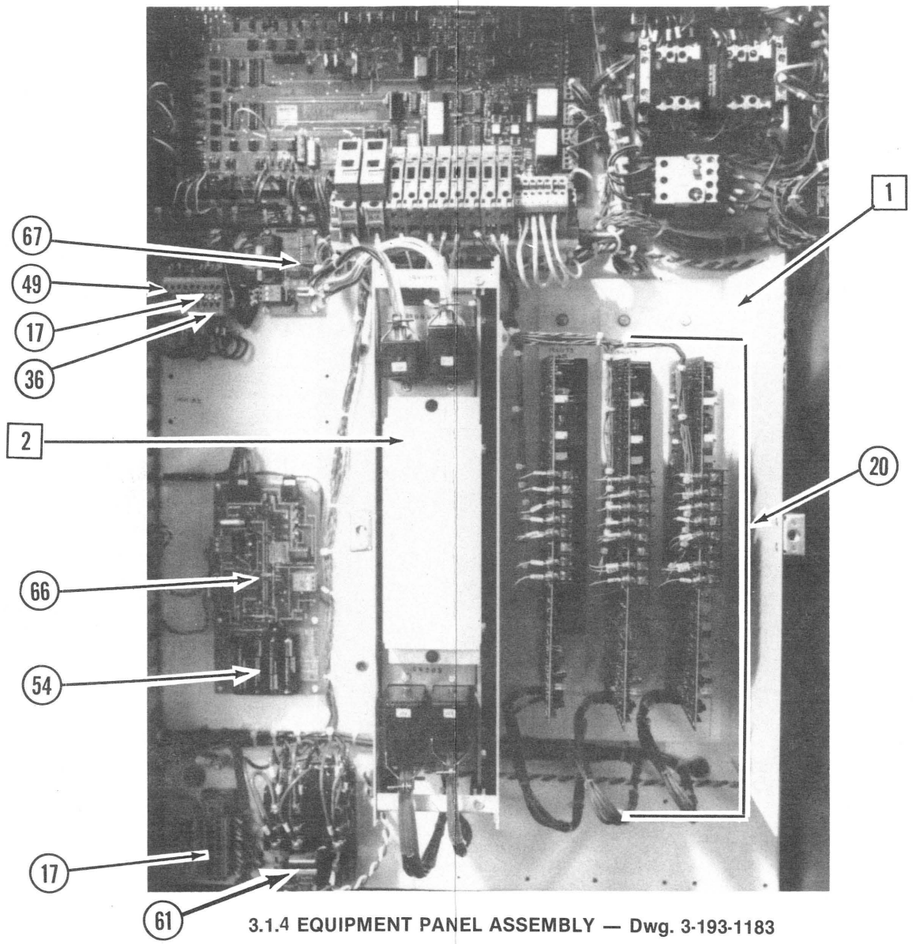
3.1.3 DRIVE POWER SUPPLY ASSEMBLY — Dwg. 3-193-9893

AXIS DRIVES

3.1.4 EQUIPMENT PANEL ASSEMBLY — Dwg. 3-194-1183
MACHINE #170 to #268
(BOTTOM)

Item	Code No.	Description
17	3-150-8130	Terminal Block (15)
20	3-194-1171	MSI Drive Assembly
1	3-194-1172	Card Rack Assembly
2	3-193-9893	Drive Power Supply Assembly
4	3-193-1173	Motor Drive Assembly
36	3-150-8134	Jumper Bar Assembly (3 Pole)
49	3-150-8133	Jumper Bar (2 Pole) (2)
54	3-154-1179	A.A. Batteries (4)
61	3-154-1772	Contactor
66	3-194-1006	FPU Board Assembly
67	3-193-9964	RSRS Board Assembly

Legend:
○ Item Listed In Equip. Panel Assembly
□ Item Listed In Drive Assembly

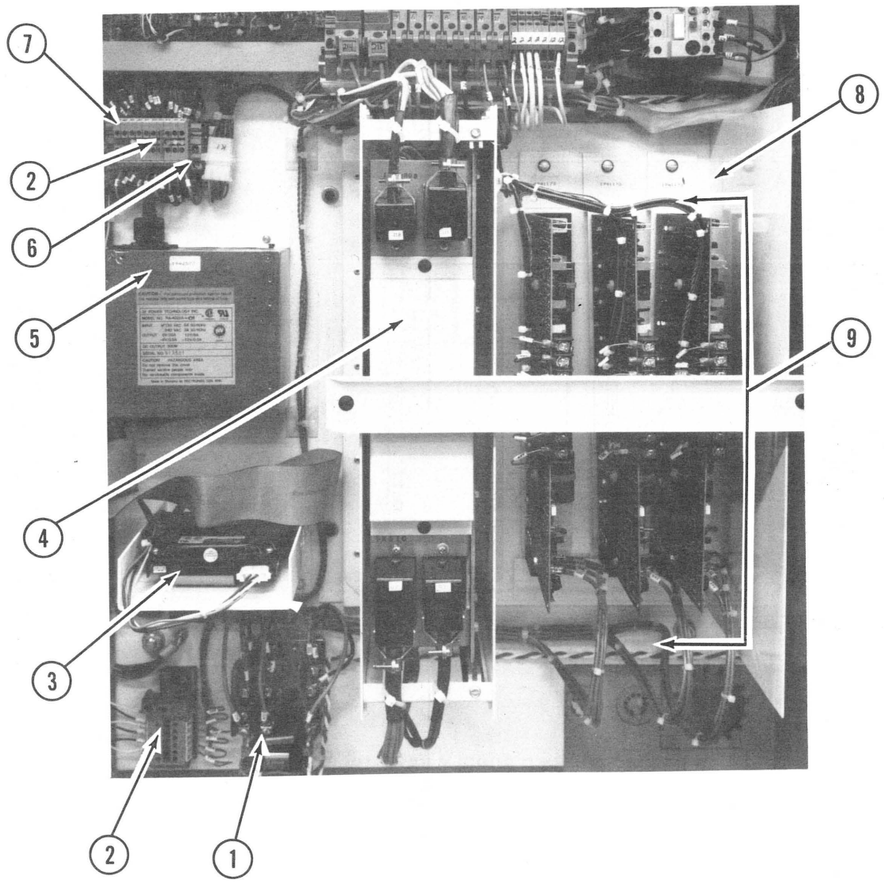


3.1.4 EQUIPMENT PANEL ASSEMBLY — Dwg. 3-193-1183

AXIS DRIVES

3.1.4 EQUIPMENT PANEL ASSEMBLY — Dwg. 3-194-2476
(BOTTOM)
MACHINE #269 AND UP

Item	Code No.	Description
1	3-154-1772	Contactor
2	1-150-8130	Terminal Block
3	3-194-2393	Enhanced Performance / Option /
4	3-193-9893	Drive Power Supply Assembly
5	3-194-2577	Power Supply Assembly / 200 Watt Modified /
6	3-150-8134	Jumper Bar (3 Pole)
7	3-150-8133	Jumper Bar (2 Pole) (2)
8	3-194-1172	Card Rack Assembly
9	3-194-1171	MSI Drive Assembly



3.1.4 EQUIPMENT PANEL ASSEMBLY — Dwg. 3-194-2476

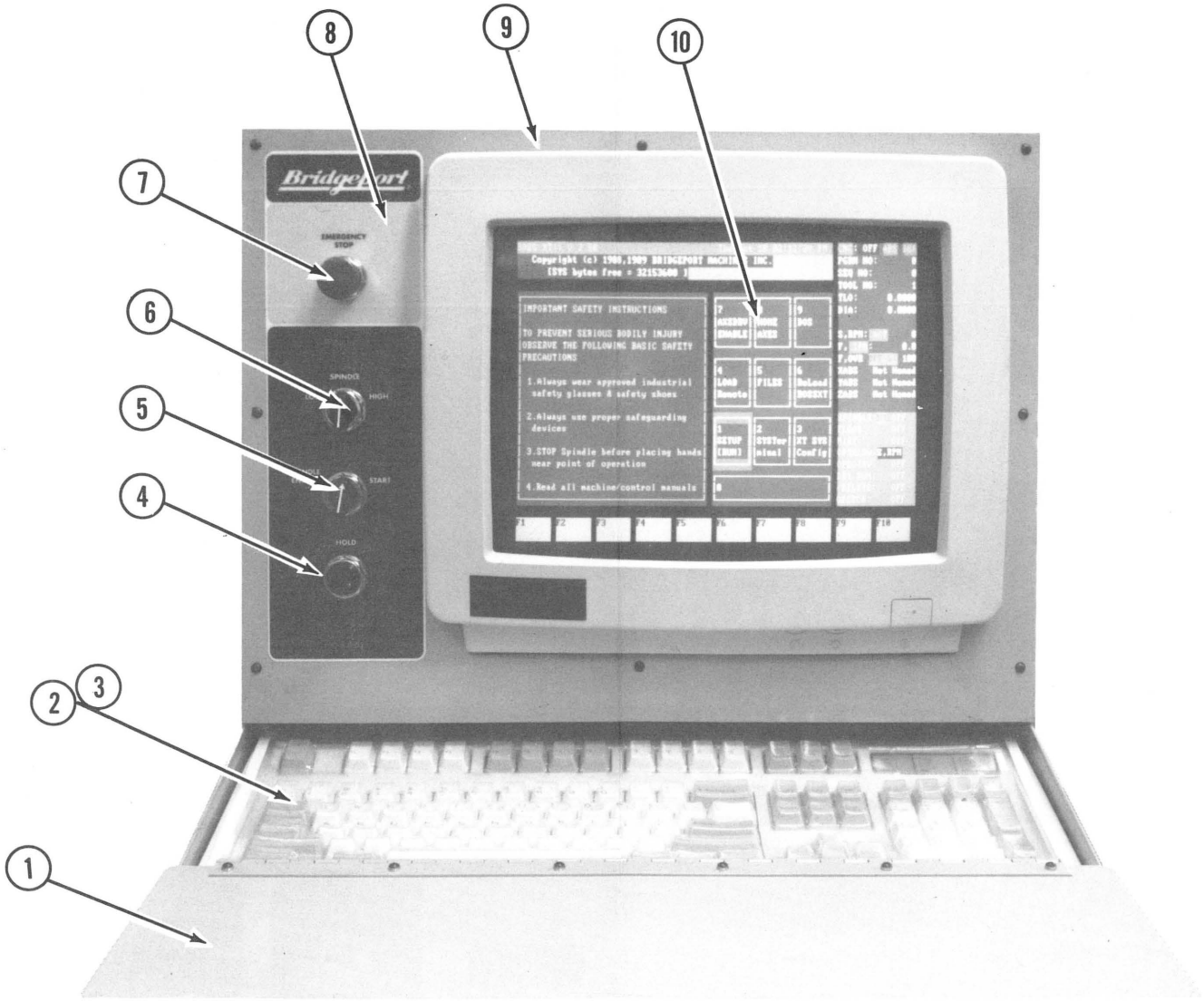
CHAPTER 4

CONTROL SYSTEM

4.1 CRT HOUSING ASSEMBLY — Dwg. 3-194-2374

MACHINE 269 AND UP

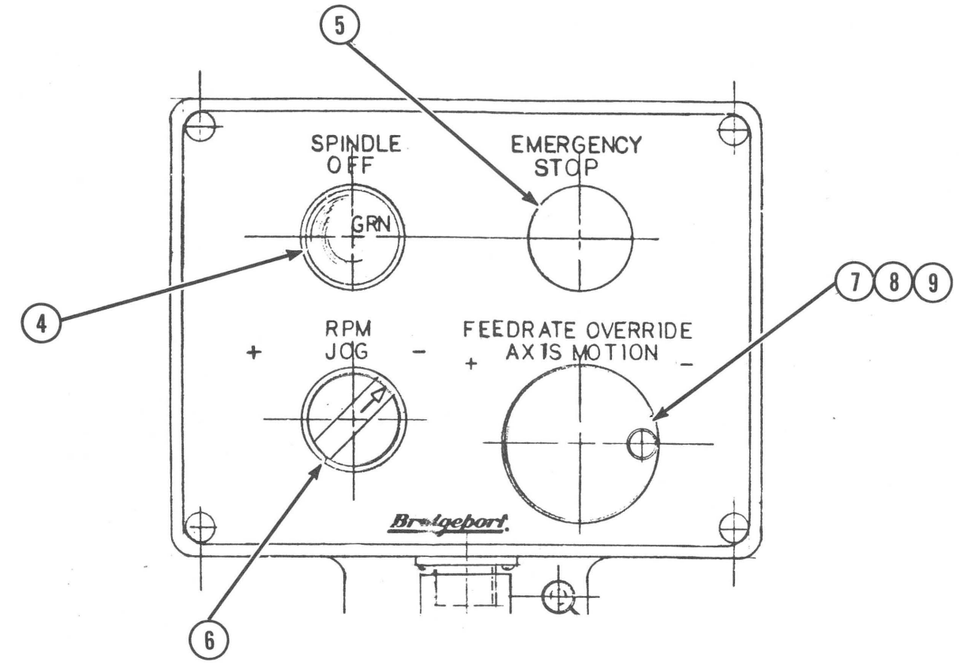
Item	Code No.	Description
1	3-154-2040	Keyboard Cover
2	3-194-2384	Keyboard Protector
3	3-154-2037	Keyboard
4	3-150-4166	Hold Switch
5	3-154-0811	Spindle, Enable — Start Switch
6	3-154-0811	Spindle High-Low Switch
7	3-150-8790	Emergency Stop Switch
8	3-194-2376	Front Panel Assembly
9	3-194-2342	Front Panel
10	3-194-2377	Color Monitor Assembly
	3-154-2054	Fan, 3 Inch



CONTROL SYSTEM

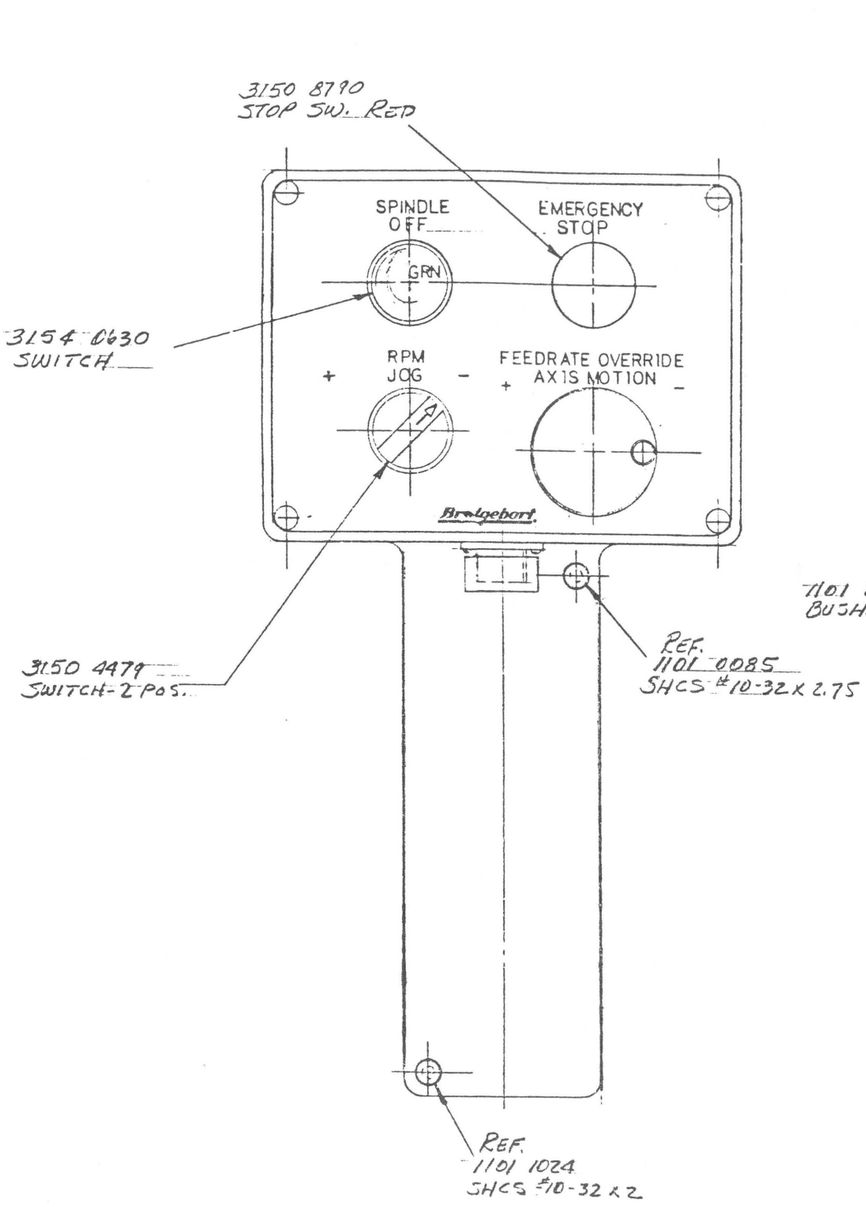
4.1.1 OPERATOR STATION ASSEMBLY — Dwg. 1-274-2800

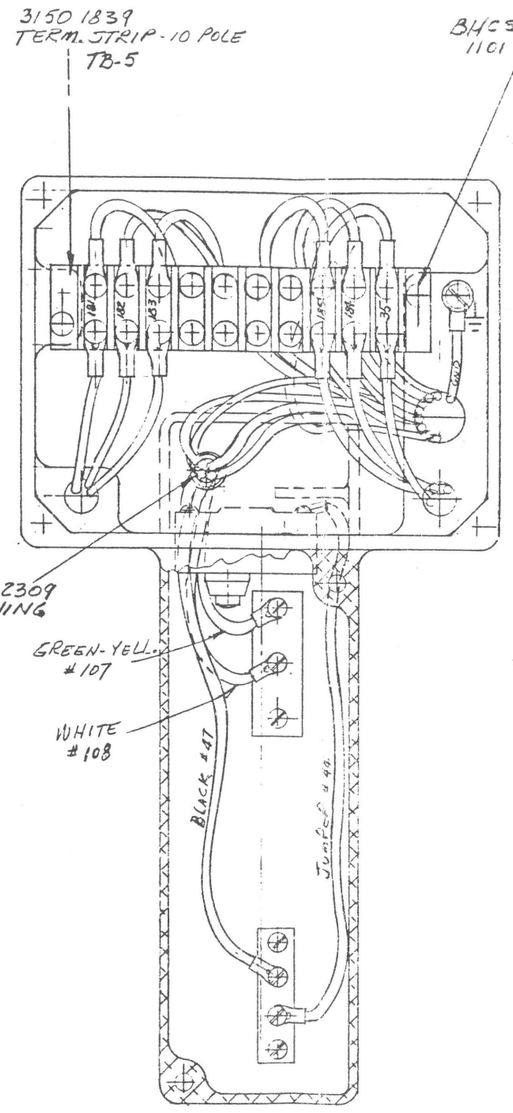
Item	Code No.	Description
4	3-154-0630	Spindle OFF Switch
5	3-150-8790	Emergency Stop Switch
6	3-150-4479	Jog Switch
7	3-154-0234	Axis Motion Transducer Encoder
8	3-150-6576	External Tooth Washer, .375
9	3-154-0275	Knob

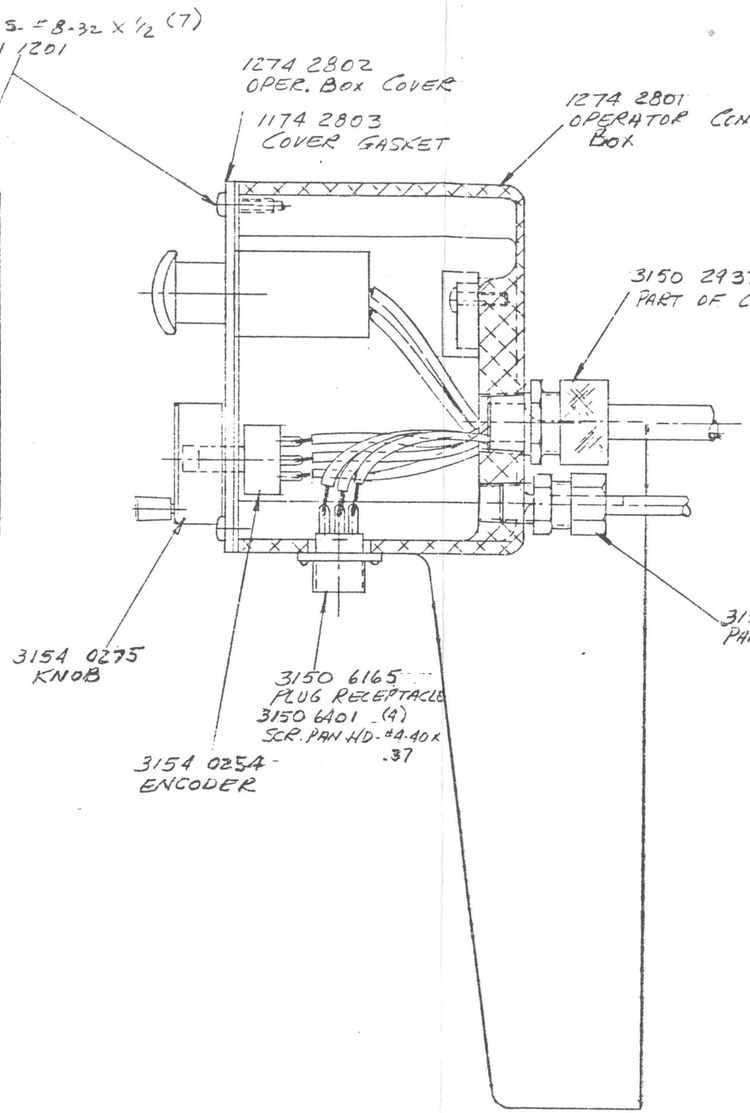


4.1.1 OPERATOR STATION ASSEMBLY — Dwg. 1-274-2800

REVISIONS				
EN No	ZONE	REV	DESCRIPTION	DATE
9655		00	NEW RELEASE	4-12-89



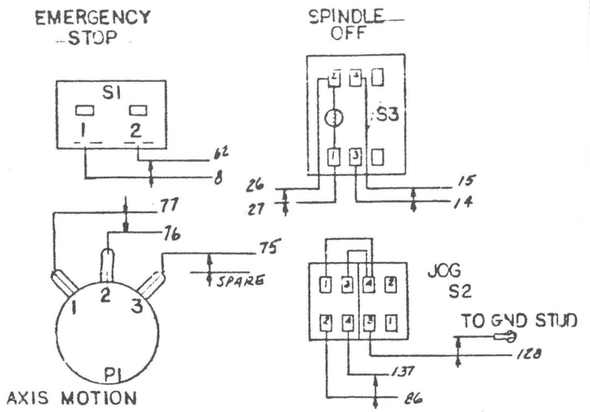




UNLESS OTHERWISE NOTED	GEOMETRIC TOLERANCE	NEXT ASSY	Bridgeport BRIDGEPORT MACHINES, INC.
DRN BF 4-12-89	CHK D		TITLE V2XT OPERATOR STATION ASSEM
APP D	DATE		SIZE D FSCM NO 03607 DWG NO 74-2800 REV 00
DATE			SCALE 1/1 RELEASE DATE SHEET 1 OF 2

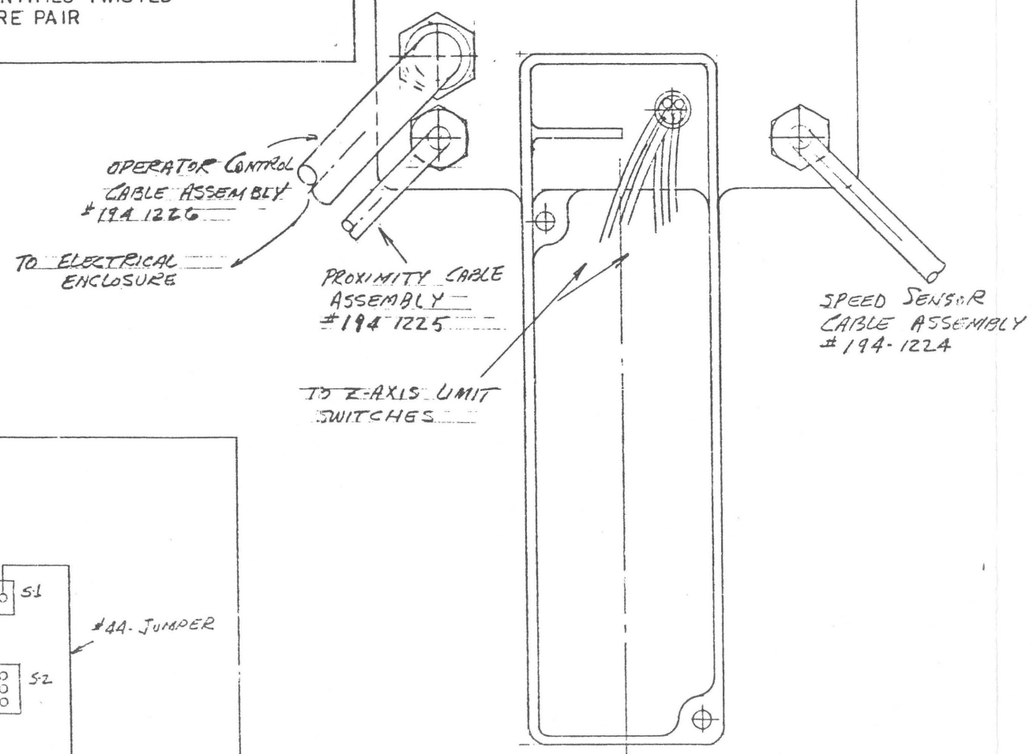
DWG No 74-2300 SH 2

REVISIONS				
EN No	ZONE	REV	DESCRIPTION	DATE
9655		00	NEW RELEASE	4-12-89



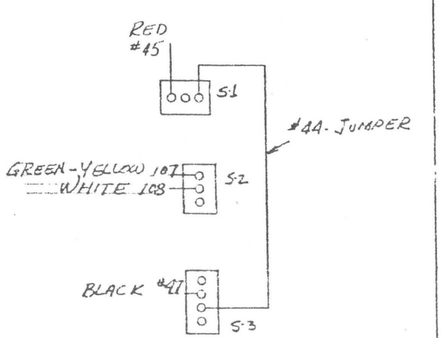
OPERATOR STATION SWITCH WIRING

IDENTIFIES TWISTED WIRE PAIR


OPERATOR CONTROL CABLE ASSEMBLY #194-1226
TO ELECTRICAL ENCLOSURE
PROXIMITY CABLE ASSEMBLY #194-1225
TO Z-AXIS LIMIT SWITCHES
SPEED SENSOR CABLE ASSEMBLY #194-1224

WIRE TABLE

WIRE COLOR TWISTED PAIR		WIRE NUMBER	FROM	TO	REMARKS
1	WHITE	8	S1-1	K21-3	
	BLACK	62	S1-2	TB-62	
2	WHITE	137	S2-L4	K42-3	
	YELLOW	186	S2-L2	K42-1	
3	WHITE	GND	GND. STUD	PANEL GND.	
	BROWN	128	S2-R3	K42-2	
4	WHITE	77	P1-1	K14-2	
	RED	76	P1-2	K14-3	
5	WHITE	SPARE			SPARE
	ORANGE	75	P1-3	K14-4	
6	WHITE	26	S3-2	K41-2	
	GREEN	27	S3-1	K41-1	
7	WHITE	15	S3-4	K34-3	
	BLUE	14	S3-3	K34-4	
8	WHITE	185	TB5-185	K27-3	
	VIOLET	184	TB5-184	K27-2	
9	WHITE	35	TB5-35	K27-1	
	GREY	181	TB5-181	K13-1	
10	BLACK	182	TB5-182	K13-2	
	BROWN	183	TB5-183	K13-3	
11	BLACK	107	K2-1	S2-NO	
	RED	108	K2-2	S2-C	
12	BLACK	47	K2-3	S1-C	
	ORANGE	45	K2-4	S3-NC	
13	BLACK		PROBE		TO BE ASSIGNED
	YELLOW		"		"
14	BLACK		"		"
	GREEN				SPARE
15	BLACK				"
	BLUE				"
#22 AWG BLUE			S2-L3	S2-R4	JUMPER - 1.5" LONG
#22 AWG BLUE			S2-L1	S2 R4	" 2" LONG
#18 AWG WHITE		44	S1-N.C.	S3-C	" 8" LONG



Z-AXIS WIRING SCHEMATIC

GEOMETRIC TOLERANCE UNLESS OTHERWISE NOTED	NEXT ASSY	Bridgeport BRIDGEPORT MACHINES, INC.	
INCH	DRN MJP 4/12	TITLE V2XT OPERATOR STATION ASSEM.	
	CKD	SIZE D	ASSEM NO 74-2300 REV 00
	DATE	SCALE 1/1	WEIGHT SHEET 2 OF 2
	APPD		
	DATE		

CHAPTER 5

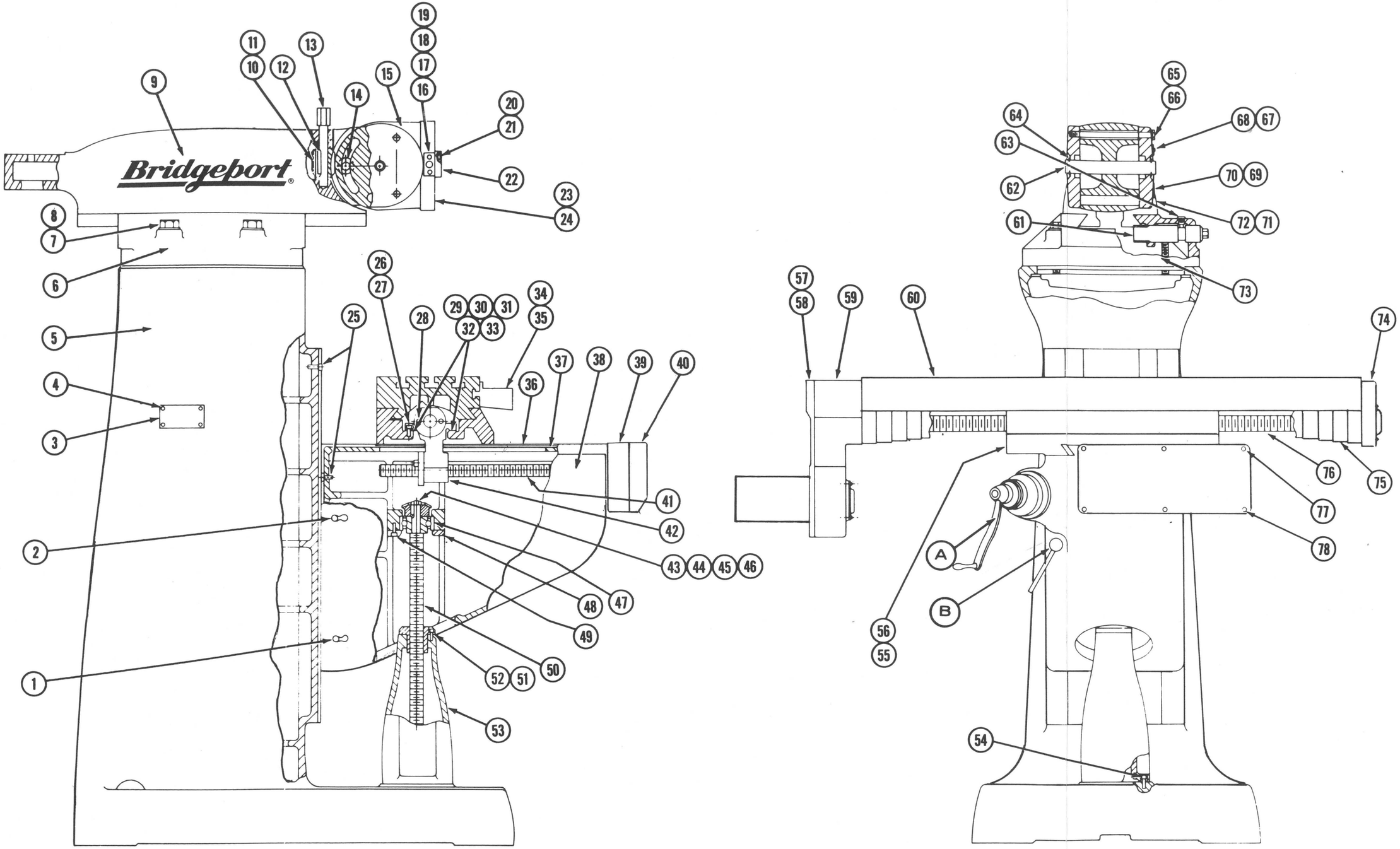
MACHINE SYSTEM BREAK DOWN

5.1 BASE ASSEMBLY

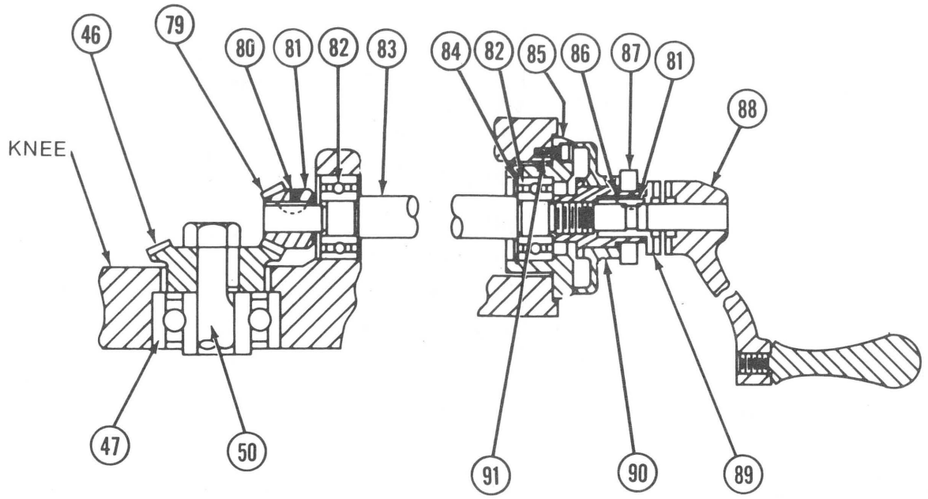
Item	Code No.	Description
1	1-206-0425	Lower Knee Lock Assembly
	1-106-2179	Handle, H-3305
	1-206-0119	Table Lock Bolt
	1-206-0423	Lower Knee Plug
2	1-206-0424	Upper Knee Lock Assembly
	1-106-2179	Handle, H-3305
	1-206-0119	Table Lock Bolt
	1-206-0422	Upper Knee Plug
3	1-106-2834	Nameplate
4	1-101-1555	Drive Screw
5	1-274-9166	Series I Column
6	1-206-0208	Turret
7	1-106-1178	H.H.C.S., .500-13x6.062
8	1-120-0109	Washer
9	1-206-0128	Ram
10	1-106-2206	Adjustment Worm
11	1-101-1216	S.S.S., 10-32x.187
12	1-206-0138	Square Key, .188x1.938
13	1-206-0130	Vertical Worm Shaft
14	1-206-0328	Clamping Bushing
15	1-206-9013	Ram Adapter
16	1-101-1017	S.H.C.S., 10-32x.500
17	1-115-2094	Spring Plunger
18	1-206-9999	Head Rotation Stop Pin
19	1-265-0180	Head Rotation Bracket
20	1-101-1035	S.H.C.S., .250-20x1.00
21	1-101-0590	Roll Pin, .312x1.500
22	1-219-0178	Head Tilting Gear
23	1-106-0603	Ram Adapter Scale
24	1-198-0426	Drive Screw #4x.3
25	1-177-0252	Stop Screw
26	1-101-1074	S.H.C.S., .375-16x1.000
27	1-101-0543	Roll Pin, .187x1.000
28	1-101-1075	S.H.C.S., .375-16x1.250
29	1-174-9049	Shim, .0005
30	1-174-9050	Shim, .001
31	1-174-9051	Shim, .002
32	1-174-9052	Shim, .003
33	1-174-9053	Shim, .004
34	3-193-9514	X-Axis Cover
35	1-166-5694	B.H.C.S., 10-32x.250
36	1-106-0152	Chip Guard
37	1-106-0153	Chip Guard
38	1-274-9037	Knee with Chrome
39	1-274-9001	Y-Axis Bracket
40	1-274-9002	Y-Axis Bracket Cover
41	1-174-9020	Y-Axis Ballscrew (.200" Lead)
42	1-274-9023	Ballscrew Bracket
43	1-101-1755	Hex Jam Nut, 5-20
44	1-206-0072	Knee Elevating Washer
45	1-206-0071	Key Square, .1875
46	1-106-2204	Bevel Gear
47	1-106-0205	Bearing
48	1-206-0070	Bearing Retainer
49	1-101-1031	S.H.C.S., .250-20x.625
50	1-206-0069	Z-Axis Leadscrew
51	1-206-0051	Z-Axis Screw Nut
52	1-101-1195	B.H.C.S., .250-20x1.000
53	1-206-0207	Pedestal
54	1-101-1074	S.H.C.S., .375-16x1.000
55	1-274-1380	Saddle with Chrome
56	1-206-0489	Saddle Lubricating Kit (Sect. 6.1)
	1-141-3235	Drive Bushing (6)
	1-141-3230	Bracket
	1-141-3236	Tubing Clip (2)
	1-141-0052	10-Way Junction Assembly
	1-141-0063	Junction
	1-141-3219	Compression Nut (8)
	1-141-3221	Compression Sleeve
	1-141-3225	Nylon Tubing, .156 OD (9ft.)
	1-141-3211	Metering Unit (5)
	1-141-3210	Meter Unit (3)
	1-141-3226	Closure Plug
	1-141-3220	Compression Bushing
	1-141-3224	Brass Tubing, .156 OD (.417ft.)
	1-141-3293	Compression Sleeve
57	1-274-9004	X-Axis Bracket Cover
58	1-101-1031	S.H.C.S., .250-20x.625
59	1-274-9003	X-Axis Bracket
60	1-206-0346	42" Table
61	1-206-0255	Ram Pinion
62	1-206-1028	Adapter Pivot Pin
63	1-206-0140	Ram Pinion Screw
64	1-106-0892	Retaining Ring (2)
65	1-120-0109	Washer
66	1-106-1180	H.H.C.S., .500-13x7.25
67	1-101-1552	Drive Screw
68	1-119-2856	Ram Adapter Warning Plate
69	1-101-1555	Drive Screw
70	1-106-2826	Angle Plate
71	1-106-0602	Ram Scale
72	1-198-0426	Drive Screw [3] 4x.3
73	1-206-0144	Turret Miller Spider
74	1-274-9015	Table End Bracket
75	1-174-9030	Cover
76	1-174-9019	X-Axis Ballscrew (.2000" Lead)
77	1-101-1041	S.H.C.S., .250-20x1.625
78	1-101-1034	S.H.C.S., .250-20x..875
79	1-106-2205	Pinion Gear
80	1-101-1220	S.S.S., .250-20x.250

5.1. BASE ASSEMBLY
(CONTINUED)

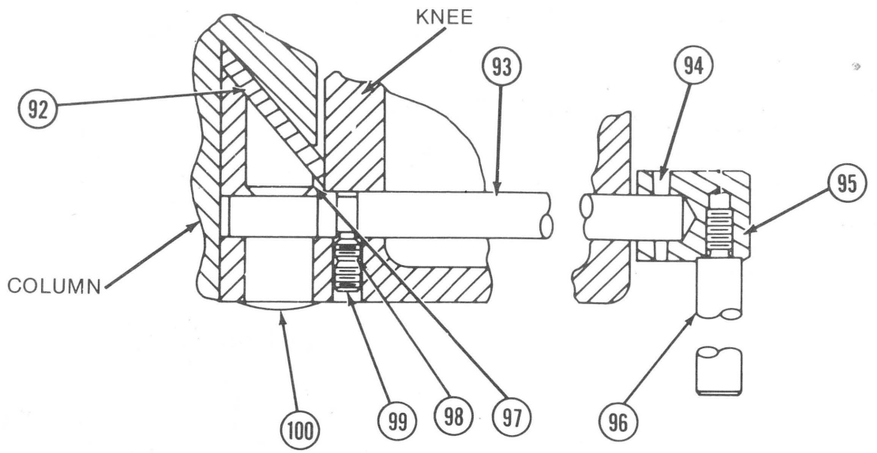
Item	Code No.	Description
81	1-101-3078	#7 Woodruff Key
82	1-106-0204	Bearing (2)
83	1-206-0147	Gear Shaft
84	1-165-0895	Retaining Ring
85	1-206-0210	Bearing Retainer
86	1-206-0077	Dial Holder
87	1-206-0078	Knurled Dial Locknut
88	1-206-1249	Knee Crank Assembly
89	1-206-0079	Clutch Sleeve
90	1-206-0076	Z-Axis Inch Dial
91	1-101-1030	S.H.C.S., .250-20x.500
92	1-206-0146	Knee to Column Gib
93	1-206-0148	Knee Locking Camshaft
94	1-101-0409	Taper Pin #1x1.000
95	1-206-0091	Cam Shaft Hub
96	1-206-0092	Knee Locking Handle
97	1-206-0089	Knee Lock Plunger
98	1-101-1375	S.S.S., .312-18x.312
99	1-101-1270	S.S.S., Knurled .312-18x.312
100	1-101-0786	Knee Gib Lock Pin Plug
101	1-106-0088	Gib Adjustment Screw
102	1-206-0124	Saddle to Knee Gib
103	1-106-2405	Felt Wiper (2)
104	1-101-1031	S.H.C.S., .250-20x.625
105	1-106-0093	Left Side Wiper Holder
106	1-106-0094	Right Side Wiper Holder
107	1-206-0141	Untapped Ram Clamp
108	1-206-0137	Ram Clamp Bar
109	1-101-0770	Rivet Pin
110	1-206-0136	Tapped Ram Clamp
111	1-115-2802	Positioning Plate
112	1-101-1555	Drive Screw
113	1-106-0112	Ram Lock Stud (2)
114	1-278-0466	Adjustable Motor Assembly
	1-101-1207	S.S.S., 8-32x.250
	1-178-0468	Timing Pulley, 12T
	1-178-0511	S.S.S., .250-28x.37
	1-278-0467	Timing Collar
	1-278-0469	Timing Bushing
115	1-274-9041	Motor Mounting Adapter (2)
116	1-101-0173	F.H.C.S., .312-24x.562 Set
117	1-142-1984	Washer, .343 (8)
118	1-101-1050	S.H.C.S., .312-18x.500 (8)
119	1-119-1965	External Lock Washer, .312 Set
120	1-165-2116	Timing Special Belt
121	1-177-0151	Flat Washer, 1.125x531x.187
122	1-101-0301	Locknut (2)
123	1-174-9044	Taper Lock Bushing (2)
124	1-174-9043	Timing Pulley (24T) (2)
125	1-206-0075	Bearing Retainer Ring (2)
126	1-101-1076	S.H.C.S., .375-16x1.500
127	1-106-0203	Bearing (2)
128	1-274-9027	X-Axis Bearing Spacer
129	1-278-0491	Motor Pulley Access Cover (2)
130	1-166-5162	B.H.C.S., 10-32x.375
131	1-166-5280	#222 Loctite
132	1-101-1130	F.H.C.S., 10-32x.500
133	1-274-9024	X-Axis Bearing Plate
134	1-274-9028	Y-Axis Bearing Spacer
135	1-165-2113	Timing Belt
136	1-206-0482	Table/Saddle Gib Chrome
137	1-101-1250	S.S.S., .500-13x.375
138	1-274-9139	Splash Cover
139	1-101-1001	S.H.C.S., 6-32x.250
140	1-274-9149	X-Axis Trip Dog Bracket
141	1-171-1085	S.H.C.S., .375-16x3.250
142	1-215-0321	Tee Nut Stop Dog (2)
143	3-194-0967	X-Axis Cable Assembly
	3-154-0726	Switch, Limit
144	1-101-1191	B.H.C.S., 10-32x.625
145	1-101-1072	S.H.C.S., .375-16x.875
146	1-274-9006	X-Axis Mounting Block
147	1-101-1082	S.H.C.S., .375-16x2.750
148	1-274-9018	X-Axis Trip Dog Bracket
149	1-206-0123	Knee Wiper Plate (2)
150	1-106-2406	Felt Wiper (4)
151	1-101-1580	O.H.M.S., 10-32x.500
152	1-211-0069	Knee Access Cover
153	1-198-0449	B.H.C.S., .250-20x.375
154	1-274-9145	Y-Axis CAM
155	1-101-1033	S.H.C.S., .250-20x.75
156	3-194-0968	Y-Axis Cable Assembly
	3-154-0726	Switch, Limit
157	1-101-1010	S.H.C.S. 10-24x.50
158	1-274-0049	Y-Axis CAM (Home Position)
159	1-274-0048	Y-Axis CAM (Forward Position)
160	1-101-1010	S.H.C.S. 10-24x.50 (4)
161	1-117-1900	Washer, #10 Flat (2)
162	1-274-9146	Bracket, Trip Dog
163	1-101-1030	S.H.C.S. .250-20x.50 (2)



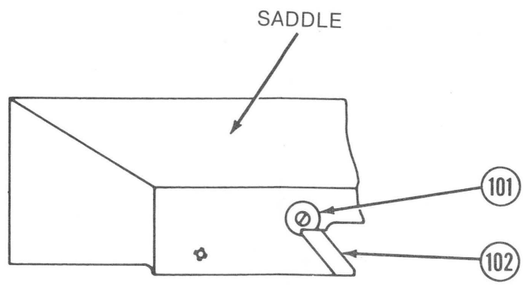
5.1 BASE ASSEMBLY — Sheet 1 of 4



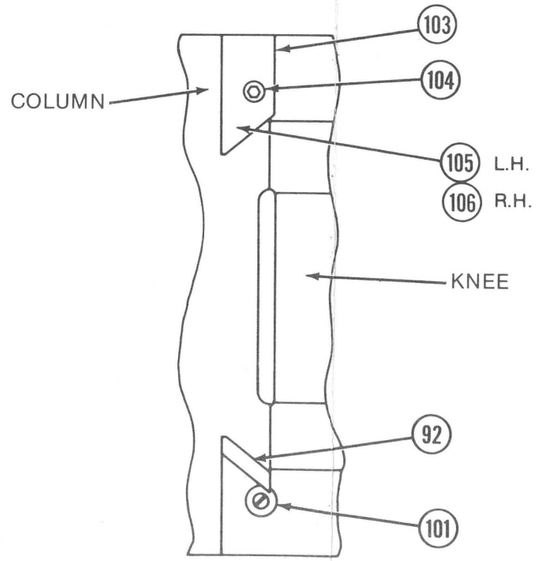
(A) Z-Axis Crank Assembly



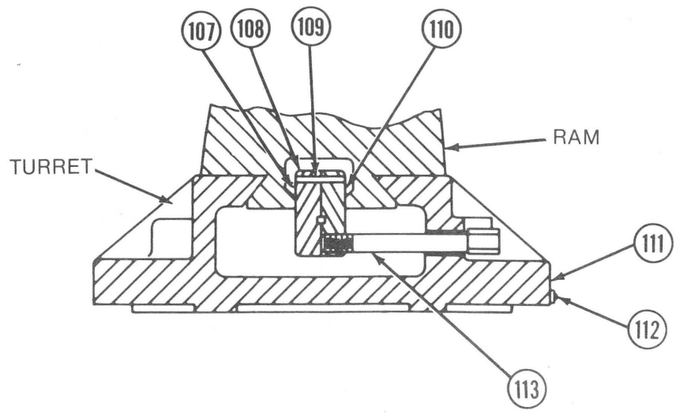
(B) Knee Gib-Lock Assembly



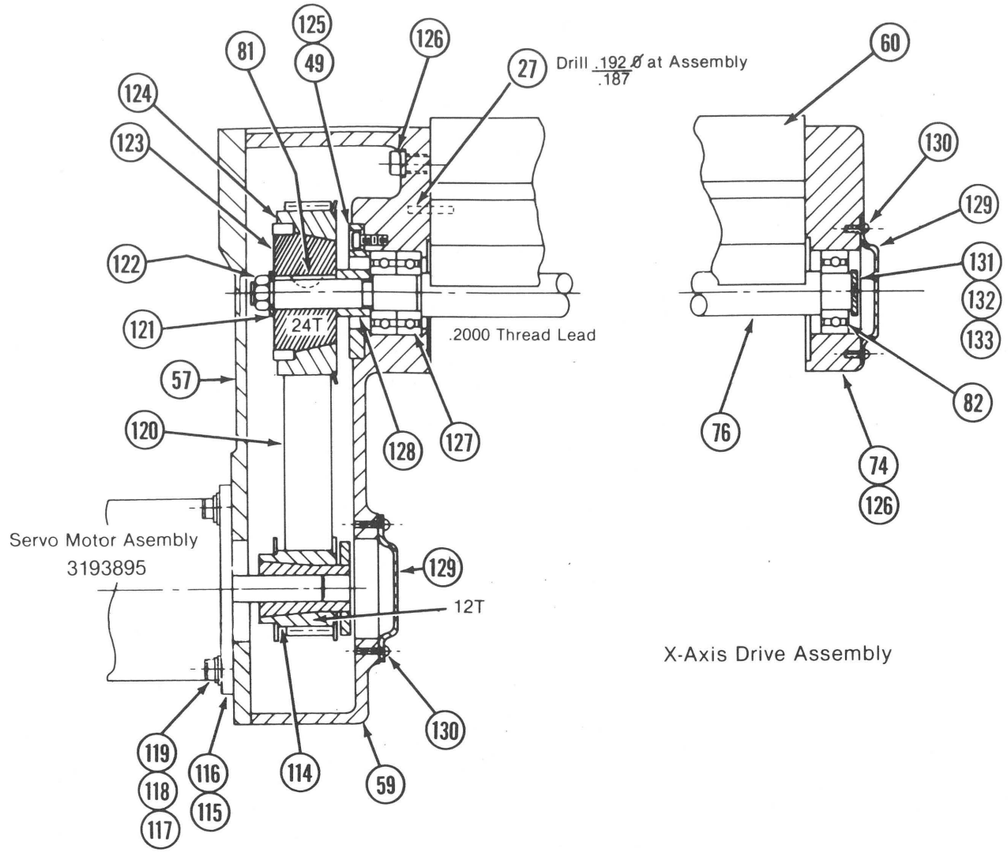
Y-Axis Gib Assembly



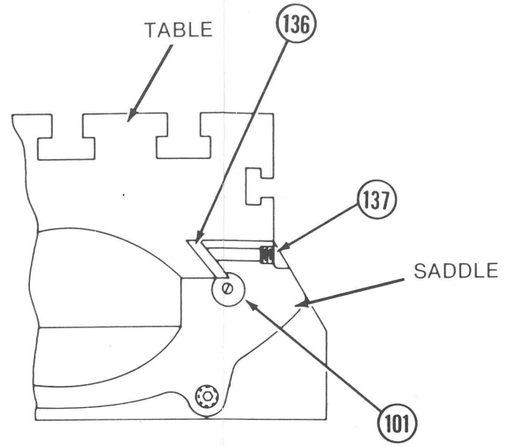
Z-Axis Gib and Wiper Assembly



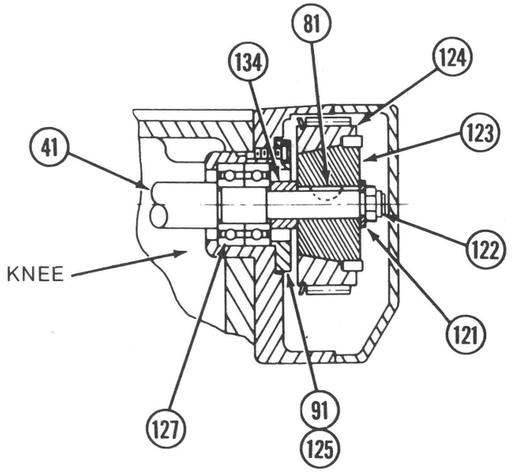
Ram Lock Assembly

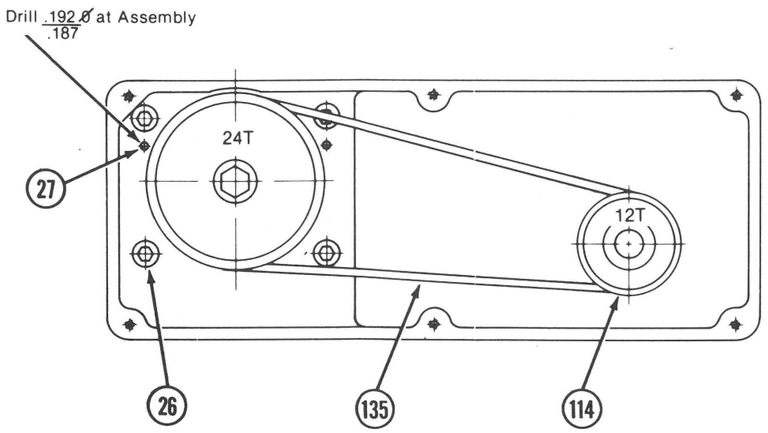


X-Axis Drive Assembly



X-Axis Gib Assembly





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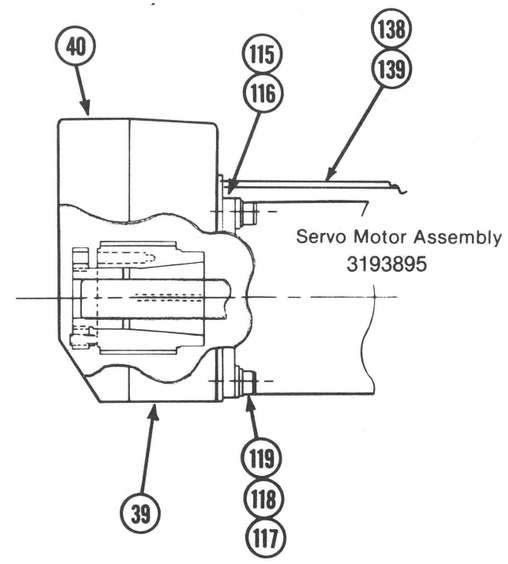
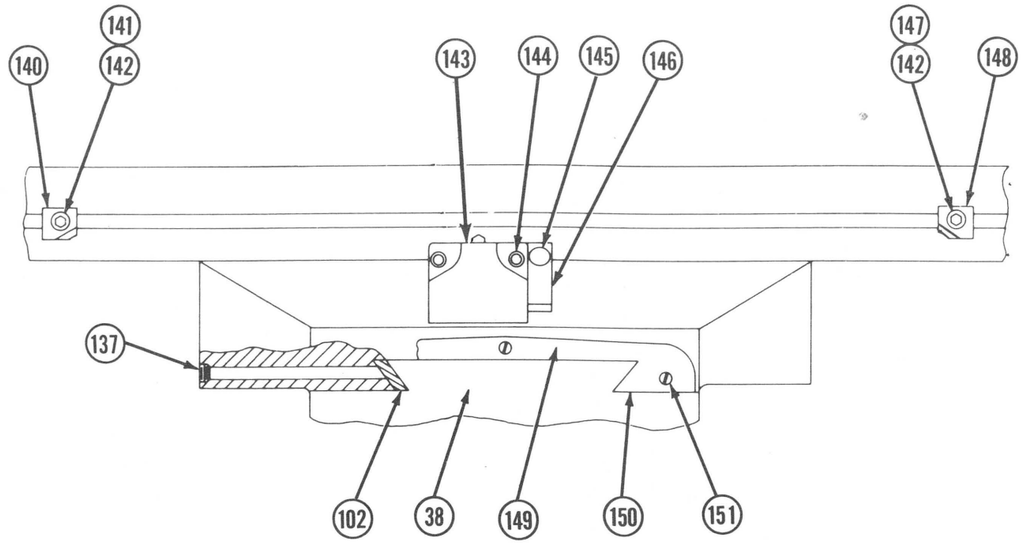
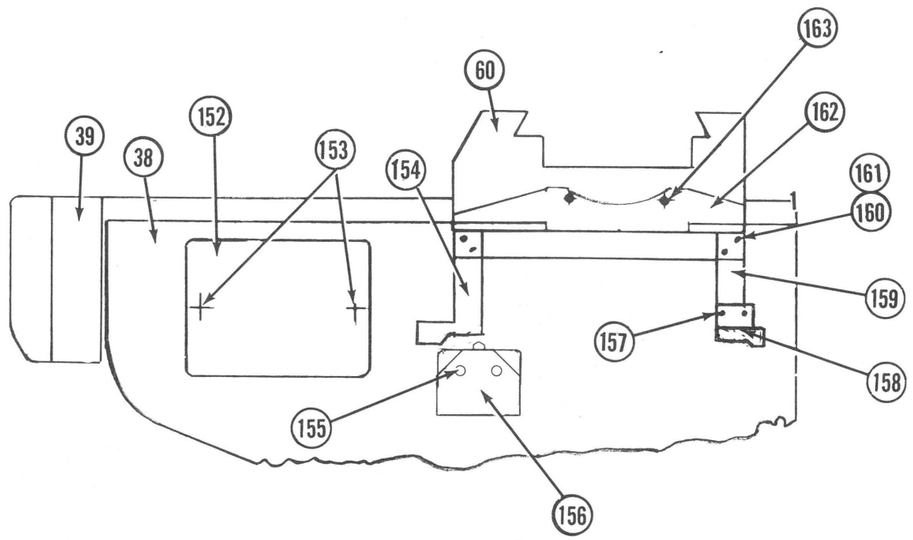


5.1 BASE ASSEMBLY — Sheet 3 of 4



X-Axis Limit Switch and Trip Dogs



Y-Axis Limit Switch and Trip Dogs

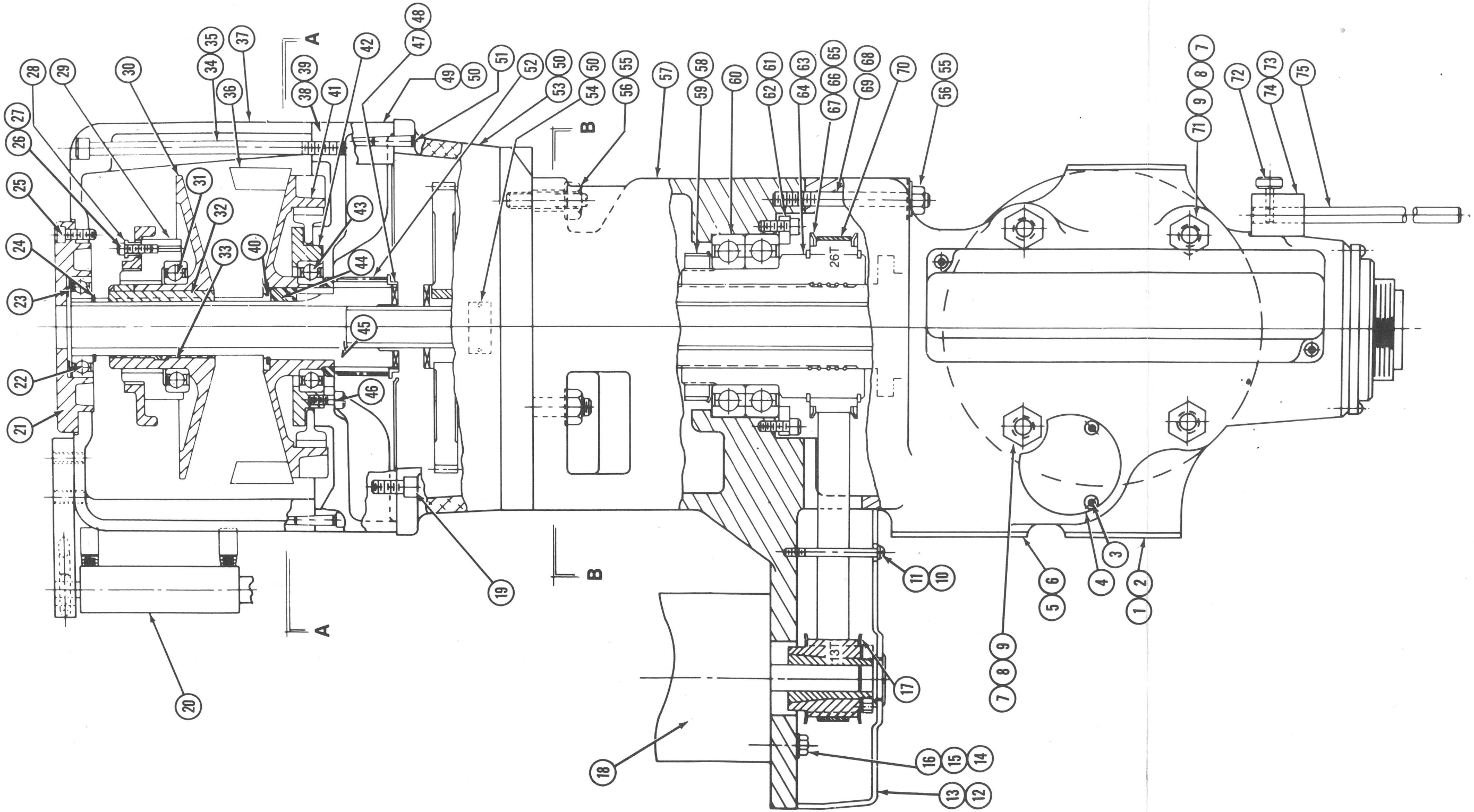
5.1 BASE ASSEMBLY — Sheet 4 of 4

5.2 HEAD ASSEMBLY — Dwg. 1-274-9116

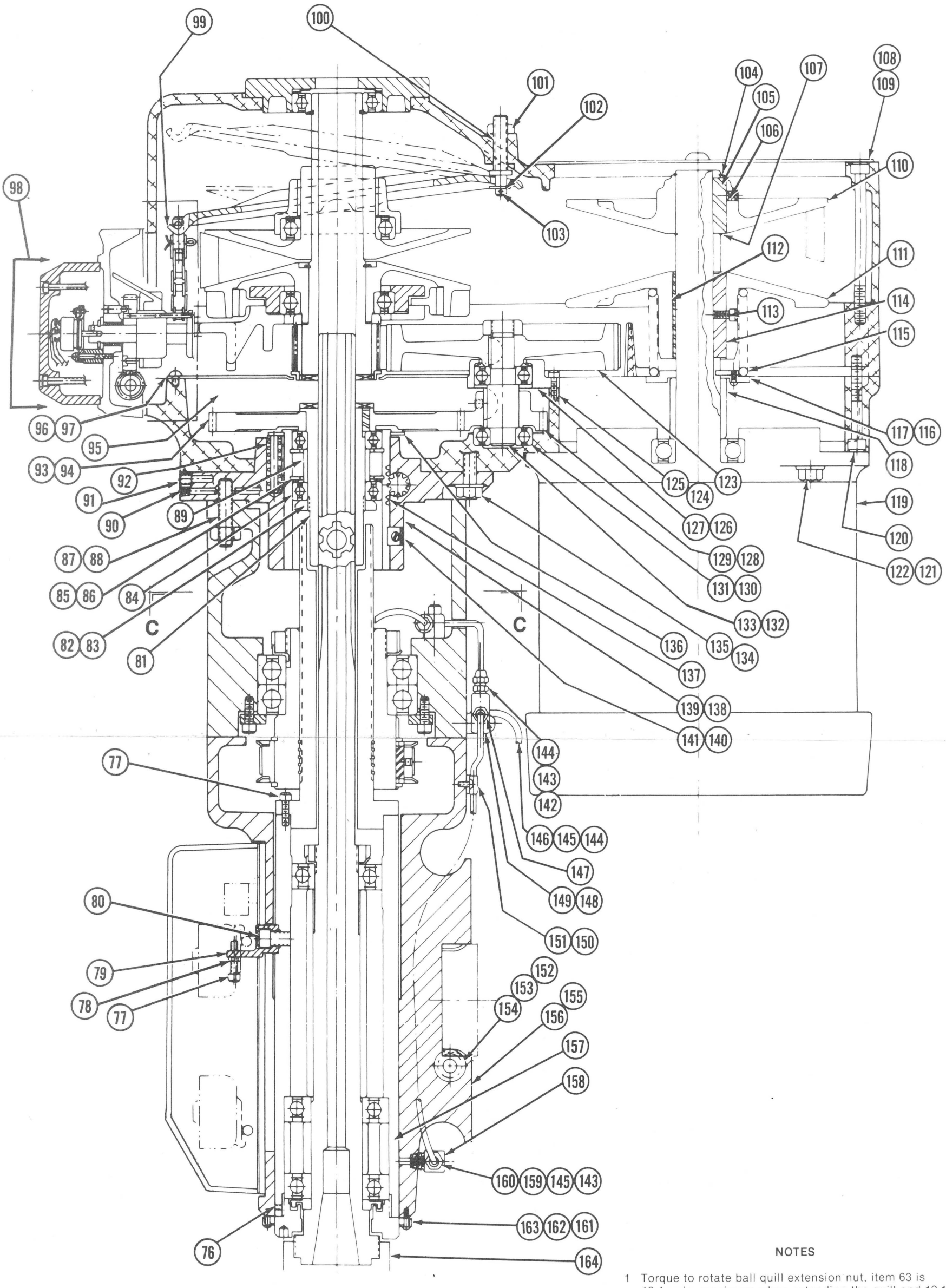
Item	Code No.	Description
1	1-101-1010	S.H.C.S., 10-24x.500 (4)
2	1-265-5208	Clutch Arm Hole Cover (2)
3	1-265-5209	Feed Trip Bracket Cover
4	1-101-1028	S.H.C.S., .250-20x.375 (2)
5	1-165-5210	Gear Box Cover
6	1-101-1445	R.H.M.S., 10-24x.375 (4)
7	1-219-1620	T-Bolt, .500-13 (4)
8	1-120-0109	Washer (4)
9	1-101-1728	Hex Nut, .5-13 (4)
10	1-177-0083	R.H.M.S., 10-32x2.25 (3)
11	1-117-1900	#10 Flat Washer (3)
12	1-277-0140	Z-Axis Drive Motor Cover
14	1-101-1143	H.H.C.S., .312-18x1.000 (4)
15	1-165-1909	Flat Washer, .328 (4)
16	1-119-1965	Lock Washer, .312 (External) (4)
17	1-278-0472	Adjustable Motor Assembly
	1-101-1207	S.S.S., 8-32x.250
	1-178-0471	Special Pulley (13 Teeth)
	1-278-0473	Motor Pulley Flange
	1-178-0511	S.S.S., .250-28x.375 (3)
	1-278-0467	Timing Pulley Collar
	1-278-0470	Taper Sheave Bushing (13 Teeth)
	1-278-0473	Motor Pulley Flange
18	3-193-8395	Motor Assy, Servo
19	1-101-1052	S.H.C.S., .312-18x.750 (2)
20	1-265-1750	Pneumatic Brake Assy. (Sect. 5.6)
21	1-218-0094	Belt Housing Top Bearing Cap
22	1-118-0252	Bearing
23	1-118-1977	Spring Washer
24	1-118-0848	Retaining Ring
25	1-101-1033	S.H.C.S., .250-20x.750 (3)
26	1-101-1020	S.H.C.S., 10-32x.750 (2)
27	1-166-5819	#242 Locktite
28	1-218-0089	Pivot Sleeve (2)
29	1-218-0056	Varidisc Housing Bearing
30	1-218-0081	Adjustable Driven Varidisc
31	1-117-0262	Bearing
32	1-118-2122	Flat Plastic Key
33	1-118-2124	Adjustable Varidisc Bearing (2)
34	1-101-1065	S.H.C.S., .312-18x4.0 (3)
35	1-101-1069	S.H.C.S., .312-18x6.0 (2)
36	1-118-2120	Variable Speed Belt
37	1-277-0128	Upper Belt Housing
38	1-277-0125	Belt Housing Base
39	1-118-0107	Taper Pin, #4x1.0 (2)
40	1-118-0855	Snap Ring
41	1-218-0082	Stationary Driven Varidisc
42	1-218-0057	Bearing Brake Cap
43	1-117-0262	Bearing
44	1-218-0084	Key Square, .312x.562
45	1-218-0078	Spindle Pulley Spacer
46	1-101-1034	S.H.C.S., .250-20x.875 (2)
47	1-255-0012	Spindle Pulley Hub
48	1-218-0064	Clutch Sleeve
49	1-118-2897	2J Lube Nameplate
50	1-101-1552	Drive Screw (8)
51	1-118-0107	Taper Pin, #4x1.000 (2)
52	1-155-2106	Timing Belt
53	1-118-2893	2J Head Hi-Lo Speed Ring
54	1-119-2879	J-Head Nameplate
55	1-101-1720	Hex Nut, .375-16 (6)
56	1-120-0109	Washer (6)
57	1-274-9025	Drive Motor Bracket
58	1-177-0149	Locknut
59	1-177-0150	Bearing Lock Washer
60	1-177-0118	Bearing
61	1-277-0103	Bearing Retainer
62	1-101-1033	S.H.C.S., .250-20x.750 (5)
63	1-177-0100	Z-Axis Ball Quill Assembly
64	1-101-0879	Retaining Ring (2)
65	1-277-0200	Key Square, .188x.875
66	1-101-1215	S.S.S., 10-32x.250
67	1-177-0181	Pulley Timing (26T)
68	1-218-0085	Stud (3)
69	1-101-0195	#271 Loctite
70	1-180-0012	Timimg Belt
71	1-219-0135	Lower Clamping Spacer (2)
72	1-220-0102	Thumb Screw
73	1-277-0217	Torque Rod Block
74	1-101-1036	S.H.C.S., .250-20x1.125 (2)
75	1-277-0218	Torque Rod
76	1-101-1265	S.S.S., .250-20x.250 Knurled
77	1-101-1022	S.H.C.S., 10-32x1.000 (7)
78	1-101-1705	Hex Nut, 10-32
79	1-277-0115	Limit Switch Trip Dog
80	1-101-1090	S.H.C.S., .375-24x.625
81	1-218-0111	Splined Gear Hub
82	1-118-1794	Bearing Locknut
83	1-166-5819	#242 Loctite
84	1-118-0254	Bearing (2)
85	1-118-1977	Spring Washer
86	1-118-0803	Retaining Ring (2)
87	1-277-0110	Mounting Stud (3)
88	1-101-0195	#271 Loctite
89	1-218-0063	Bull Gear Bearing Spacer
90	1-101-1232	S.S.S., .250-28x.250
91	1-101-1247	S.S.S., .312-24x.375
92	1-118-2071	Compression Spring, .312x.540
93	1-218-0062	Bull Spindle Gear
94	1-218-0103	Key Square, .312x.540
95	1-118-3152	Grease (11oz.)
96	1-177-0239	Gear Housing Plate
97	1-101-1445	R.H.M.S., 10-24x.375 (3)
98	1-274-9068	Speed Changer Assembly (PG. 5-12)
99	1-118-0058	Speed Changer Plate
100	1-218-0074	Pivot Pin
101	1-101-1745	Hex Jam Nut, .375-16
102	1-118-0095	Washer
103	1-101-0604	Cotter Pin, .093x.625
104	1-101-0880	Retaining Ring
105	1-255-0007	Drive Key
106	1-101-1222	S.S.S., .250-20x.312
107	1-177-0084	Retaining Ring
108	1-177-0127	Stamping Cover
109	1-198-0457	B.H.C.S., .375-16x.500 (2)
110	1-277-0082	Stationary Motor Varidisc
111	1-255-0046	Adjustable Motor Varidisc
112	1-118-2126	Varidisc Bushing (2)
113	1-101-1016	S.H.C.S., 10-32x.375
114	1-255-0004	Varidisc Drive Key

5.2 HEAD ASSEMBLY — Dwg. 1-274-9116
(CONTINUED)

Item	Code No.	Description
115	1-118-2083	Motor Shaft Spring
116	1-155-0003	Spring Collar
117	1-101-1022	S.H.C.S., 10-32x1.000 (2)
118	1-277-0143	Pulley-Collar-Motor Spacer
119	1-177-0101	2HP Motor
120	1-172-1060	S.H.C.S., .312-18x2.250 (3)
121	1-101-1150	H.H.C.S., .375-16x1.250 (2)
122	1-119-1922	Lock Washer, .375 (2)
123	1-255-0016	Pulley Timing
124	1-277-0126	Gear Housing
125	1-101-1011	S.H.C.S., 10-24x.625 (2)
126	1-118-1975	Spring Washer
127	1-218-0076	Countershaft Bearing Cap
128	1-101-1287	S.S.S., .250-20x.250 Knurled
129	1-218-0077	Pinion Gear
130	1-118-0235	Bearing (2)
131	1-101-3079	#9 Woodruff Key (2)
132	1-119-1738	Hex Jam Nut, .625-18
133	1-218-0075	Counter Shaft
134	1-118-1906	Flat Washer, .468 (3)
135	1-177-0282	H.H.C.S., .437-14x1.000 (3)
136	1-118-1986	Bull Gear Sleeve Washer
137	1-218-0061	Bull Gear Bearing Sleeve
138	1-218-0054	Clutch Fixed Bracket
139	1-220-0154	Oil Line Plug
140	1-101-1548	P.H.M.S., 10-32x.375 (2)
141	1-218-0105	Guide (2)
142	1-141-3210	Meter Unit
143	1-141-3219	Compression Nut
144	1-141-3221	Compression Sleeve (3)
145	1-141-3225	Nylon Tubing, 156 OD
146	1-141-3220	Compression Bushing (3)
147	1-177-0089	Meter Nut
148	1-101-1195	B.H.C.S., .250-20x1.000
149	1-141-3212	3-Way Junction
150	1-165-1199	B.H.C.S., 10-32x.500
151	1-141-3290	Tube Clip, .156
152	1-219-0850	Worm Shaft
153	1-119-2207	Single Thread Worm Gear
154	1-101-3077	#5 Woodruff Key
155	1-277-0138	Quill Housing
156	1-101-1370	S.S.S., .250-20x.375
157	1-277-0101	Quill
158	1-141-3222	90° Adapter Elbow
159	1-141-3224	Brass Tubing, .156 OD
160	1-141-3293	Compression Sleeve
161	1-177-0172	Felt Quill Wiper
162	1-177-0173	Quill Wiper Retainer
163	1-101-1193	B.H.C.S., 6-32x.375 (4)
164	1-277-2901	Spdl Assy., #200 Universal
	1-277-2900	Spindle, #30 Q.C. (Sect. 5.4.1)
165	1-118-2306	Brake Finger (2)
166	1-218-0069	Brake Lock Cam
167	1-101-1287	S.S.S., .250-20x.250 Knurled (2)
168	1-218-0104	Brake Lock Shaft Sleeve
169	1-218-0070	Brake Lock Shaft
170	1-101-0535	Roll Pin, .156x1.000
171	1-218-0083	Brake Finger Pivot Stud
172	1-118-0818	Retaining Ring
173	1-118-2081	Brake Spring (2)
174	1-218-0073	Brake Shoe Set
175	1-218-0071	Brake Shoe Pivot Sleeve
176	1-101-1138	H.H.C.S., .250-20x.750
177	1-101-0195	#271 Loctite
178	1-274-0030	Spacer, Hi-Lo, W/Prg. RPM
179	1-274-9078	Plate, Hi-Lo Detent
180	1-101-0085	S.H.C.S., 10-32x2.750 Lg.
181	1-218-0096	Block, Hi-Lo Pinion
182	1-274-9077	Pinion, Bull Gear Shifter
183	1-218-0100	Plunger, Hi-Lo Detent
184	1-118-2072	Spr. Comp., .250-.188-.562
185	1-101-0516	Pin, .125x.625 Roll
186	1-218-0099	Crank, Shift, Hi-Lo
187	1-192-2151	Knob, Bakelite, .25-20
188	3-194-0051	Cable Assy, Gear Select
189	1-174-0033	Bracket, Mtg. Prox. Sensor
190	1-174-0034	Bracket, Support Prox.
191	1-178-0457	Washer #8 Burr
192	1-166-5676	B.H.C.S., 8-32x.375
193	1-118-1007	S.H.C.S., 8-32x.625



5.2 HEAD ASSEMBLY — Dwg. 1-274-9116 — Sheet 1 of 3



NOTES

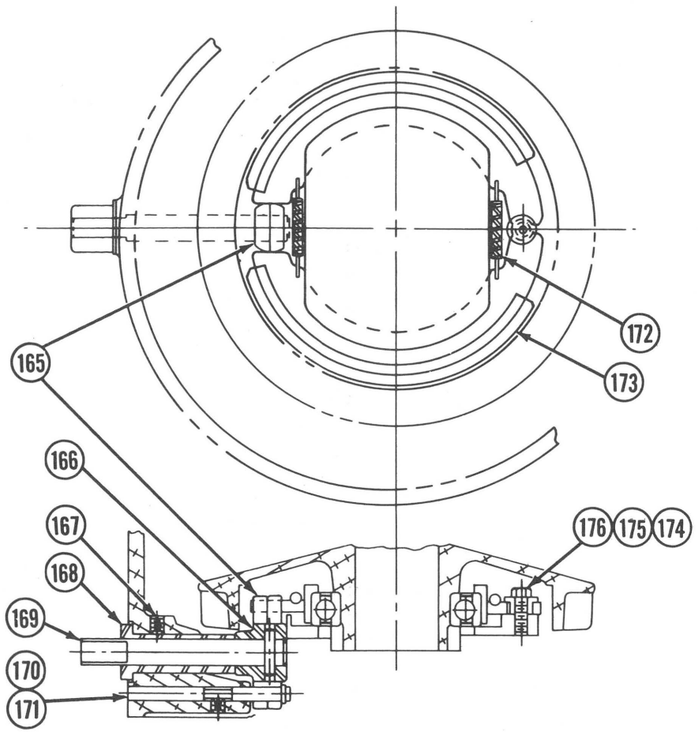
1 Torque to rotate ball quill extension nut, item 63 is 13.4 oz-in. maximum when extending the quill and 19.1 oz-in. maximum when retracting the quill. This is equal to a 28 oz. pull on drive belt (item 70) extending the quill and a 40 oz. maximum pull retracting the quill.

2 Bend copper tube as shown in side view to direct oil into ball quill extension (item 63).

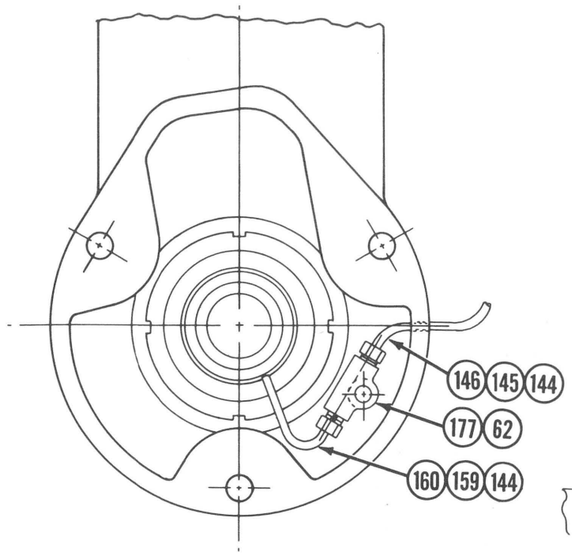
3 Adjust quill feed drive belt (item 70) to 66 lbs. tension = 1/8 in. deflection with 5 lb. force applied.

4 Ball quill extension assembly, inspection and cleaning — Spec. Dwg. 1-277-0240, 1-277-0241, 1-277-0242.

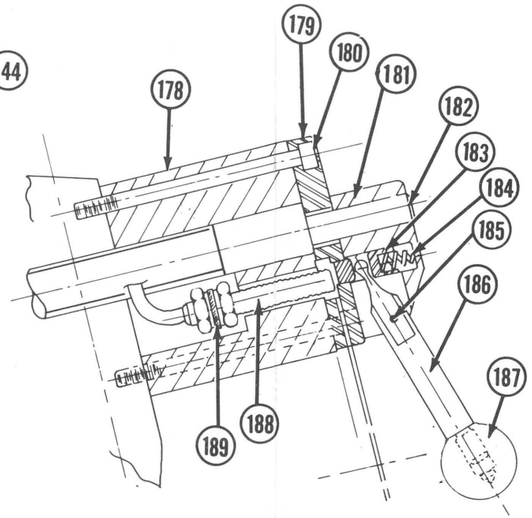
5 Quill down feed limit switch setting — Spec. Dwg. 1-274-9026.

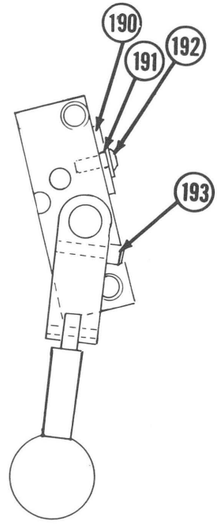


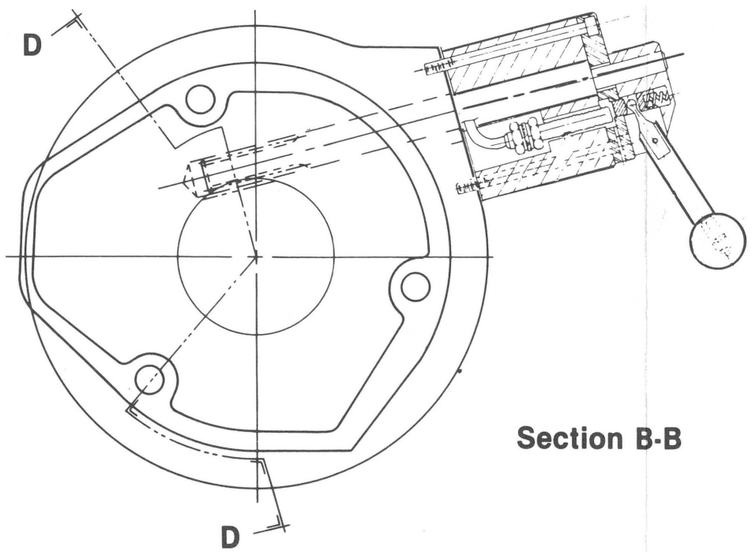
Section A-A



Section C-C







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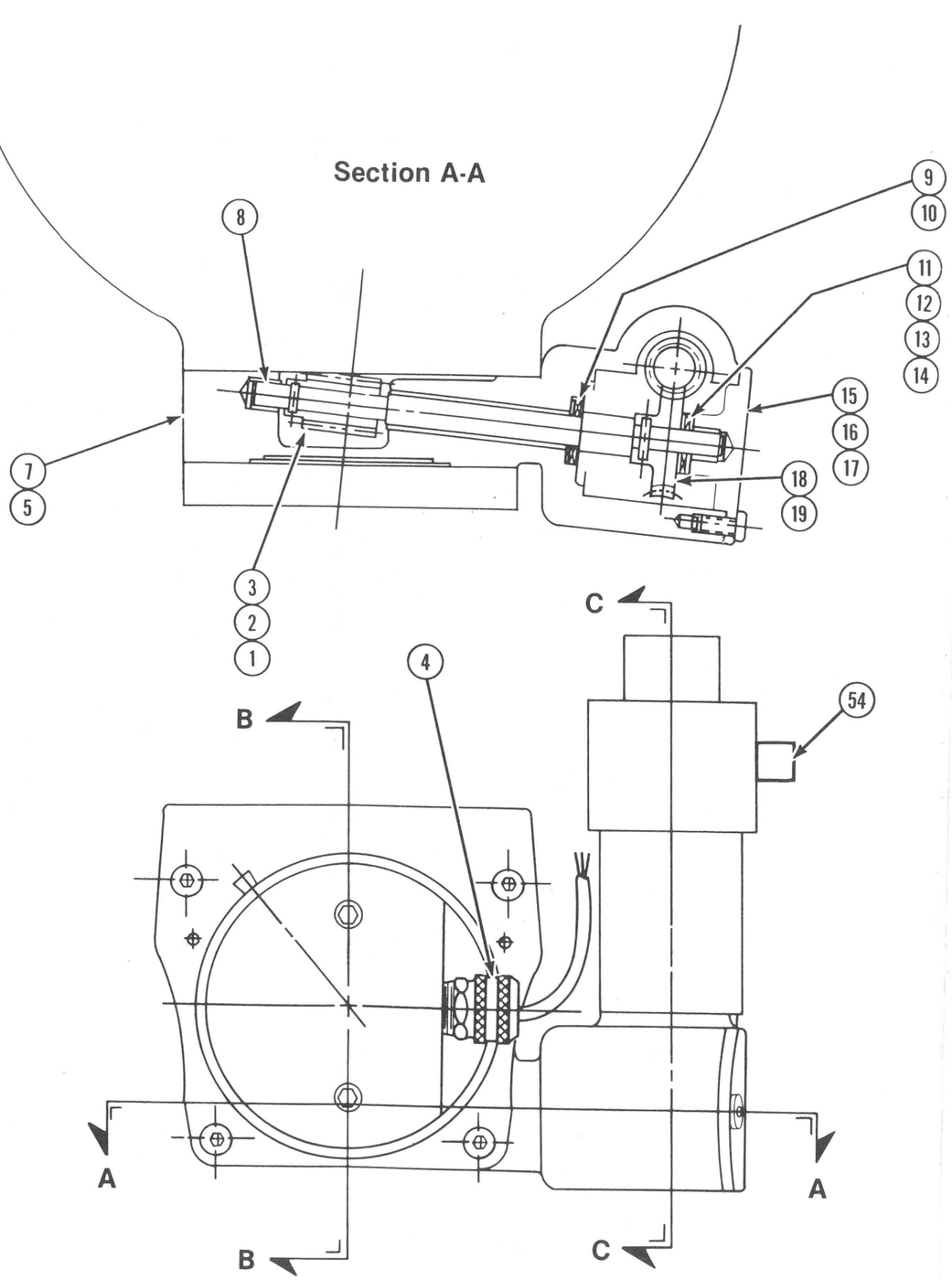
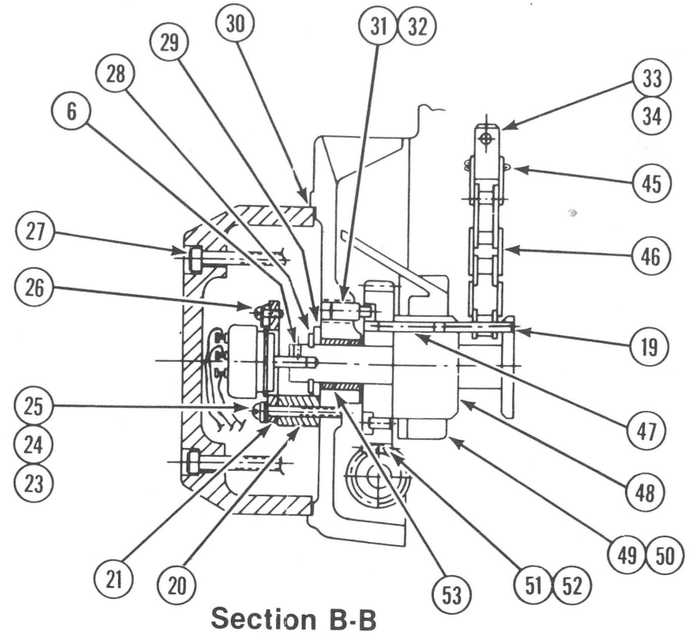
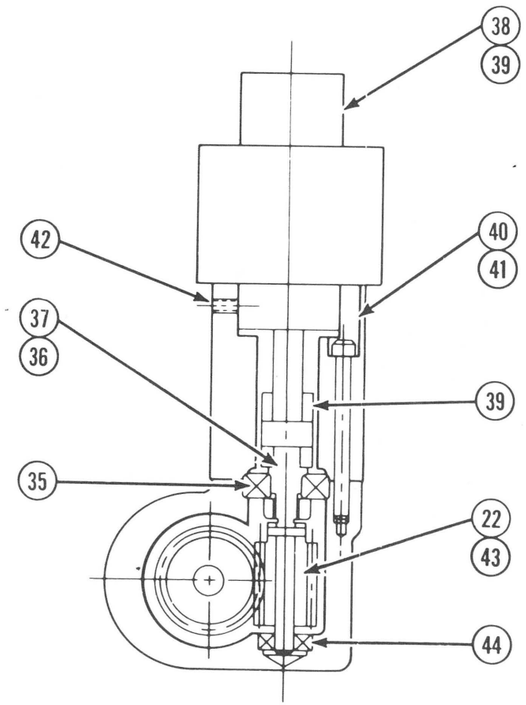




Section B-B



Section C-C

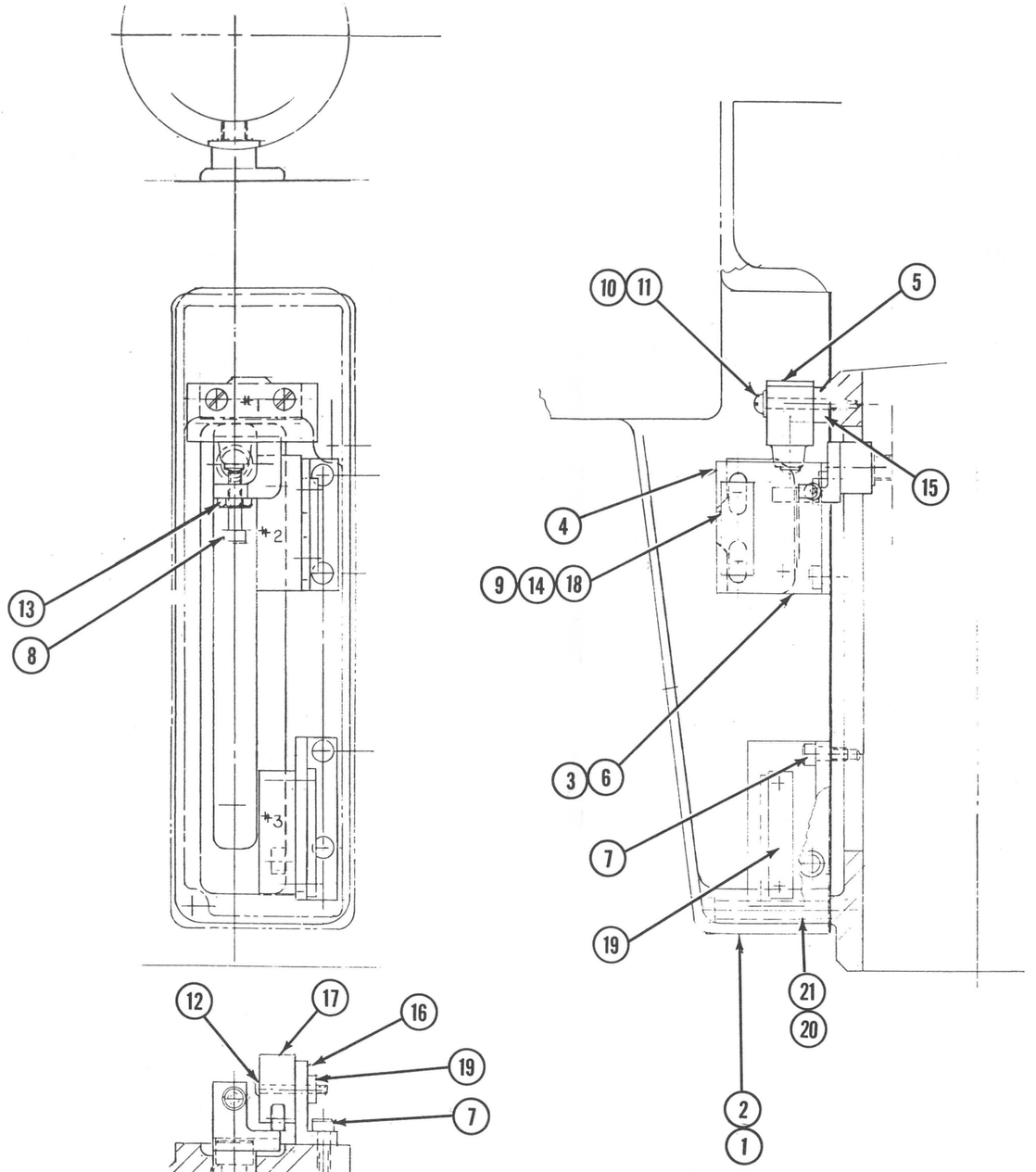
5.3 PNEUMATIC SPEED CHANGER — Dwg. 1-274-9068

5.3 PNEUMATIC SPEED CHANGER — Dwg. 1-274-9068

Item	Code No.	Description
1	1-277-0266	Speed Changer Shaft
2	1-101-0514	Roll Pin, .125x.500
3	1-119-2208	Boston Worm Gear
4	3-194-0050	Spindle Speed Cable
5	1-142-3639	Bronze Bushing
6	1-198-9272	S.S.S., 4-40x.250
7	1-277-0265	Speed Changer Housing
8	1-177-0286	Bronze Bushing
9	1-177-0267	Outer Race (2)
10	1-177-0268	Bearing
11	1-177-0704	Speed Changer Race (2)
12	1-177-0701	Bearing
13	1-177-0702	Shim, .005 (2)
14	1-177-0703	Shim, .015 (2)
15	1-277-0271	End Cap
16	1-177-0272	Bronze Bushing
17	1-101-1194	B.H.C.S., .250-20x.5 (3)
18	1-277-0269	Worm Speed Gear (20 Teeth)
19	1-101-0516	Roll Pin, .125x.625
20	1-274-0052	Spd Potentiometer Spacer (2)
21	1-274-0051	Speed Potentiometer Plate
22	1-277-0276	Boston Worm Gear
23	1-166-5411	#6 Lock Washer (2)
24	1-166-5458	#6 Flat Washer (2)
25	1-166-5157	R.H.M.S., 6-32x.875 (2)
26	1-174-0132	Motor Mount Cleat (2)
27	1-101-1032	S.H.C.S., 10-32x1.625 (2)
28	1-174-0078	Retaining Ring
29	1-274-0111	Drum Spacer
30	1-274-0060	Cover Gasket
31	1-166-5819	#242 Loctite
32	1-101-1259	S.S.S., .312-18x.625
33	1-218-0066	Chain Stud
34	1-101-0534	Roll Pin, .156x.875
35	1-177-0280	Bearing
36	1-166-5426	Lock Nut, .312-24
37	1-277-0278	Speed Changer Shaft
38	1-177-0273	Air Motor Cast
39	1-177-0279	Lovejoy Coupling
40	1-277-0274	Air Motor Mount
41	1-101-1024	S.H.C.S., 10-32x2.000 (2)
42	1-101-1260	S.S.S., 10-32x.250
43	1-101-0506	Roll Pin, .093x.500
44	1-165-0278	Bearing
45	1-101-0620	Cotter Pin, .125x.750
46	1-118-3720	Chain
47	1-101-0520	Roll Pin, .125x1.000
48	1-274-9085	Chain Drum
49	1-218-2003	Bearing Support Block
50	1-101-1031	S.H.C.S., .250-20x.625 (4)
51	1-218-0090	Spur Speed Gear
52	1-101-0259	Groved Pin, .187x.375
53	1-118-3646	Bushing
54	1-101-0247	Fitting (2)
	3-194-0050	Cable, Assy.
	3-194-0979	Cable Assy. Spindle
	3-194-1270	Cable, Spindle

5.4 LIMIT SWITCH PART GROUP — Dwg. 1-274-9026

Item	Code No.	Description
1	1-274-2801	Limit Switch Cover
2	1-174-2804	Limit Switch Gasket
3	1-177-0114	Limit Switch Bracket
4	1-166-5105	Home Limit Switch
5	1-166-5809	Z+ Limit Switch
6	1-177-0120	S.H.C.S., 10-32x.250 (2)
7	1-101-1015	S.H.C.S., 10-32x.310 (4)
8	1-172-1020	S.H.C.S., 10-32x.875
9	1-177-0122	R.H.M.S., 6-32x1.125 (2)
10	1-101-1961	#6 Locl Washer (2)
11	1-177-0122	R.H.M.S., 6-32x1.125 (2)
12	1-101-0309	R.H.M.S., 5-40x1.000 (2)
13	1-101-1705	Hex Nut, 10-32
14	1-166-5458	#6 Flat Washer (2)
15	1-277-0116	Quill Pos. Limit Switch Spacer
16	1-274-9040	Quill Switch Mounting Bracket
17	1-159-0049	Z-Limit Switch
18	1-148-0254	Z-Switch Nut Plate (Top)
19	1-148-0255	Z-Switch Nut Plate (Bottom)
20	1-101-1024	S.H.C.S. 10-32x2.00
21	1-101-0085	S.H.C.S. 10-32x2.75



LIMIT & DECELERATION SWITCH SETTING

A LOOSEN MOTOR PULLEY ASSEM. & MOVE QUILL DOWNWARD USING BELT TO ASSURE THAT SWITCH #2 IS NOT DEPRESSED.

B WITH CONTROL ON, PRESS "EXECUTE" TO PLACE AXIS IN HOME, & MANUALLY DEPRESS SW. #2.

C USING BELT, MOVE QUILL UPWARD TO CONTACT BUMPER.

D ROTATE PULLEY ASSEM. (NOT MOTOR SHAFT) ONE TURN TO MOVE QUILL DOWNWARD .100", THEN LOCK PULLEY ASSEMBLY.

E MOVE QUILL DOWN .350" USING OPERATORS CONTROL & SET SWITCH #2 TO ACTIVATE AT THIS POSITION.

F USE HANDWHEEL TO HOME QUILL (Z=0) & SET LIMIT SWITCH STOP TO ACTIVATE SWITCH #1 WITH .025/.020" FEELER GAGE BETWEEN THE TWO.

G MOVE QUILL DOWN 5.000" & SET SWITCH #3 TO ACTIVATE WITH .025/.020 FEELER BETWEEN TRIP-DOG 77-0115 & LIMIT SWITCH.

DWG No 74-9026 SH 1

REVISIONS				
EN No	ZONE	REV	DESCRIPTION	DATE
9963		05	NEW SHEET	10-24-79

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NOTES APPLY UNLESS OTHERWISE SPECIFIED
1 FILLET RADII MAX 5 MACHINING TOLERANCES
2 TO BE 63 SURF FINISH
3 BREAK ALL SHARP EDGES
4 TO BSW MIN
5 ALL THREADS CLASS 2

THIRD ANGLE PROJECTION

INCH

SAND CASTING TOLERANCES

MATL

HT TR

GEOMETRIC TOLERANCE UNLESS OTHERWISE NOTED

SYMMETRY	.005	
TRUE POSITION	.010	
FLATNESS	.003	DRN
PERPENDICULARITY	.003	DATE
PARALLELISM	.003	
ANGULARITY	.001	CK'D
RUNOUT	.004	
PROFILE OF A SURF	.003	DATE
ROUNDNESS	.003	
STRAIGHTNESS	.001	APP'D
CONCENTRICITY	.007	
CYLINDRICITY	.007	DATE

NEXT ASSY 274-9026

Bridgeport
BRIDGEPORT MACHINES, INC.

TITLE VZXT QUILL LIMIT SWITCH ASSY

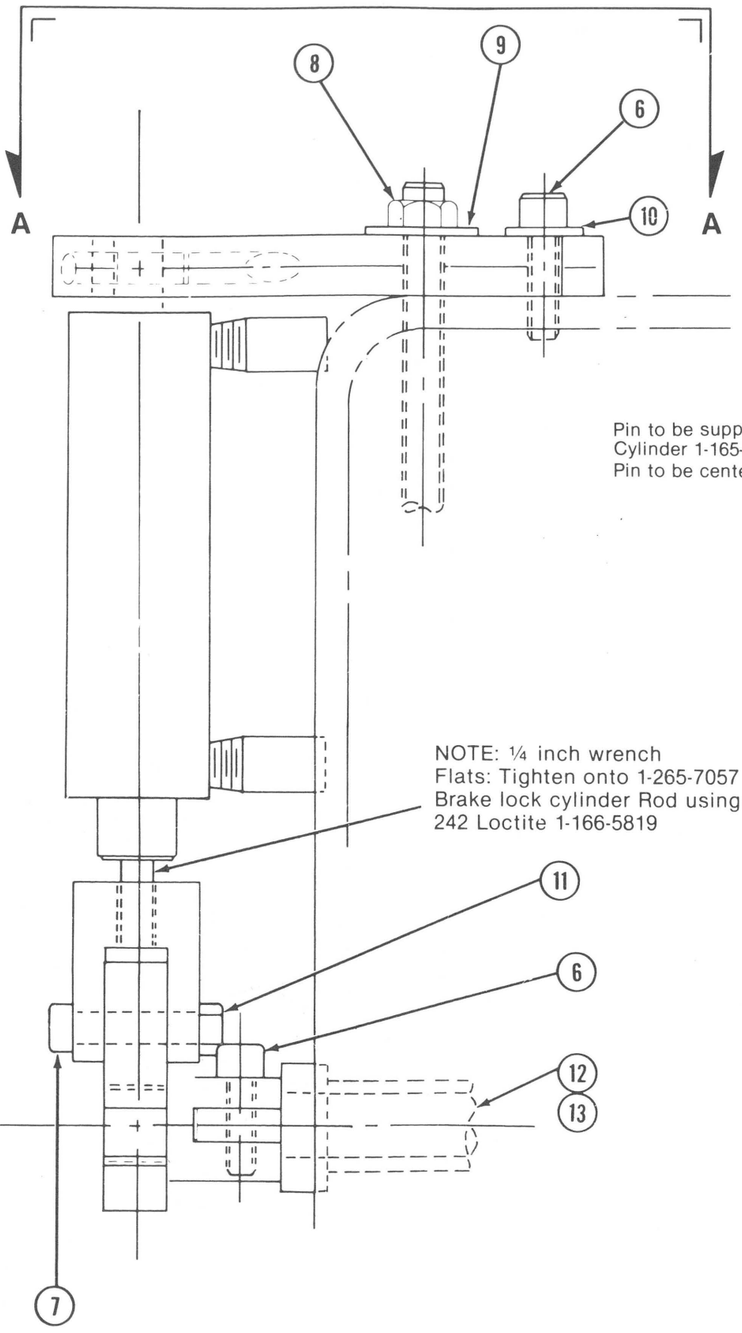
SIZE D | FSCM NO 08607 | DWG NO 74-9026 | REV 00

SCALE 1:1 | RELEASE DATE | SHEET 1 OF 2

REF. 74-2800-12

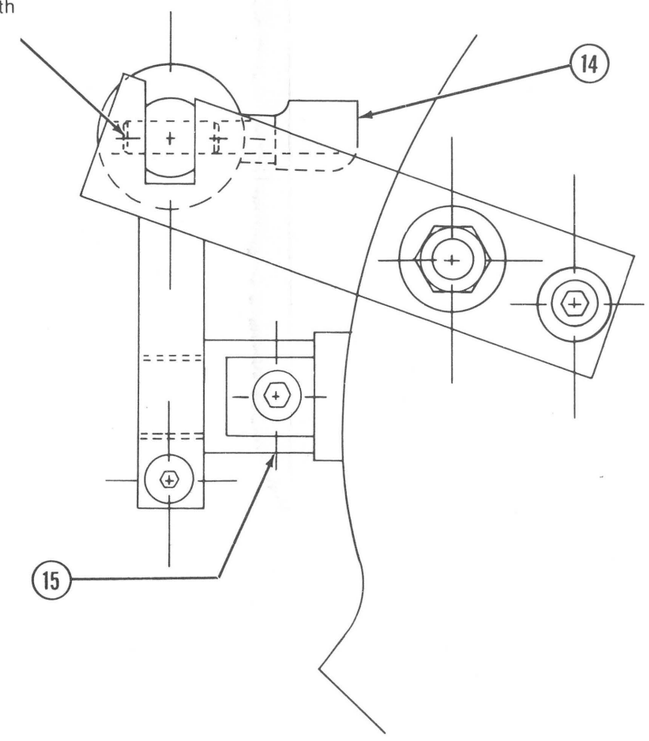
11041347-01

Item	Code No.	Description
1	1-277-0767	Cylinder Bracket
2	1-277-0766	Bracket Stud
3	1-177-1631	Brake Cylinder
4	1-277-0768	Clevis
5	1-277-0757	Lever
6	1-101-1034	S.H.C.S., .250-20x.875 (3)
7	1-165-1133	Shoulder Screw, .250x1.000
8	1-101-1710	Hex Nut, .312-18
9	1-118-1981	Washer, .875x.375x.064
10	1-111-1912	Flat Washer, .250
11	1-165-1704	Self-Locking Hex Nut, 10-24
12	1-218-0070	Shaft
13	1-218-0104	Sleeve
14	1-101-0254	Elbow (2)
15	1-277-0755	Brake Coupling

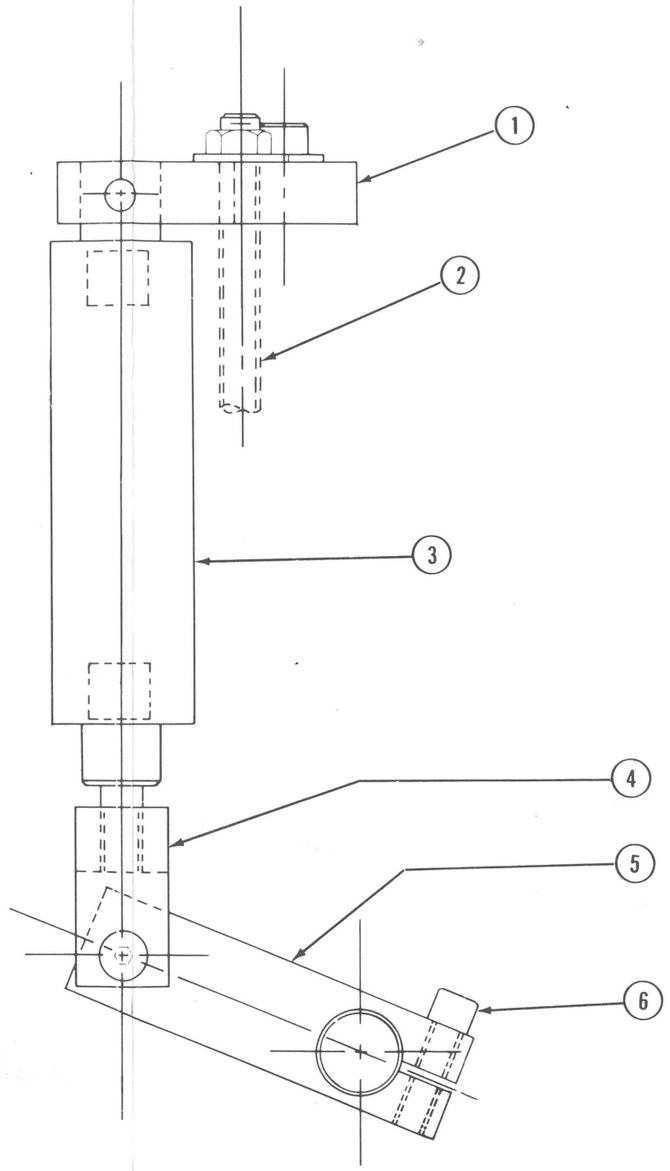


NOTE: ¼ inch wrench Flats: Tighten onto 1-265-7057 Brake lock cylinder Rod using 242 Loctite 1-166-5819

Pin to be supplied with Cylinder 1-165-3640. Pin to be centered.



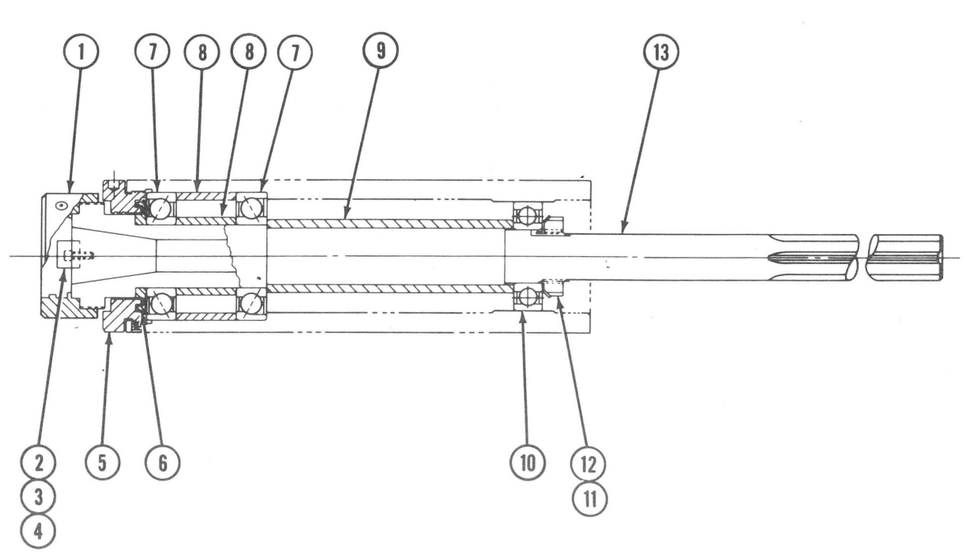
Section A-A
Top View



5.6 SPINDLE ASSEMBLY

5.6.1 #30 Q.C. SPINDLE ASSEMBLY — Dwg. 1-277-2900

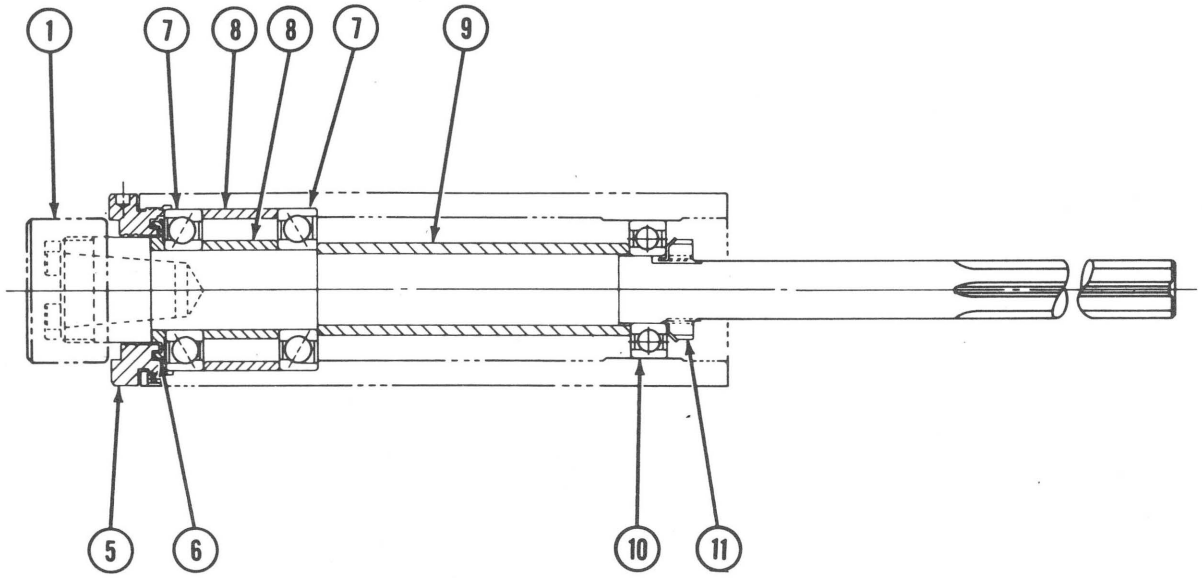
Item	Code No.	Description
1	1-157-0801	#30 Q.C. Locknut Assembly
		B.H.C.S., 10-32x.250
		B.H.C.S., 10-32x.140
		Cadmium-Plated B.H.C.S., 10-32x.140
2	1-157-2338	Drive Key (2)
3	1-101-1007	S.H.C.S., 8-32x.500 (2)
4	1-157-0803	#30 Quick Change Wrench
5	1-219-0514	Kwick Change Wrench
6	1-278-0915	Dirt Shield
7	1-177-1020	Bearing (2)
8	1-219-3513	Bearing Spacer (Set)
9	1-219-0197	Bearing Sleeve
10	1-101-0241	Grease Packed Bearing
11	1-119-1790	Locknut
12	1-119-1942	Lock Bearing Washer
13	1-277-0109	#30 Erickson Spindle



5.6.1 #30 Q.C. SPINDLE ASSEMBLY — Dwg. 1-277-2900

5.6.2 #200 UNIVERSAL SPINDLE ASSEMBLY — Dwg. 1-277-2901

Item	Code No.	Description
1	1-177-0201	#200 Universal Spindle Assembly
5	1-219-0514	Kwick Change Spindle Nut
6	1-278-0915	Dirt Shield
7	1-177-1020	Bearing (2)
8	1-219-3513	Bearing Spacer (Set)
9	1-219-0197	Bearing Sleeve
10	1-101-0241	Grease Packed Bearing
11	1-119-1790	Locknut
12	1-119-1942	Lock Bearing Washer



5.6.2 #200 UNIVERSAL SPINDLE ASSEMBLY — Dwg. 1-277-2901

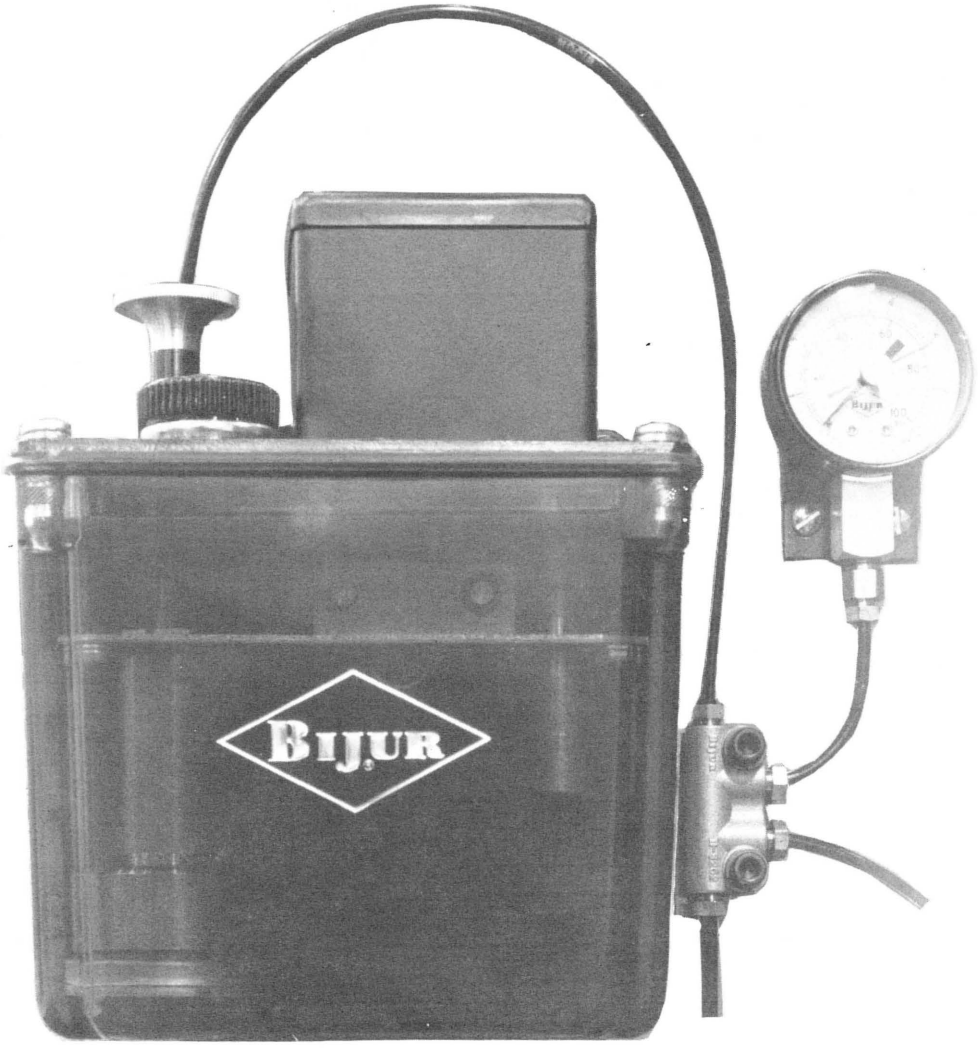
CHAPTER 6
AUXILIARIES SYSTEM

6.1 WAY LUBRICATION TANK & PUMP ASSEMBLY — Dwg. 1-141-3209

Item	Code No.	Description
A	1-141-7850	Waylube Motor
B	1-141-3241	Float Switch
C	1-141-0078	Inlet Filter Group
D	1-141-0079	Reservoir
E	1-152-3132	Waylube 1180, Quart Can

NOTES

Lubrucation Frequency
5cc every 27.7 mins. (60 Hz)
5cc every 32.0 mins. (50 Hz)
Refill every 100 hours of operation



AUXILIARIES SYSTEM

6.1.1 WAY LUBRICATION SYSTEM — Dwg. 1-274-0303

Item	Code No.	Description
1	1-156-0085	Tank Assy., Mist
2	1-101-1035	S.H.C.S., .250-20x1.000
3	1-141-3209	Tank & Pump Assy Way Lube
4	1-101-1475	R.H.M.S. .250-20x.500
5	1-141-3292	Gage Pressure
6	1-165-1199	B.H.C.S. 10-32x.500
7	1-141-3213	Junction, 4-Way
8	1-101-1195	B.H.C.S. .250-20x1.000
9	3-193-9977	Cable Unit, Spray Mist

10-WAY JUNCTION LUBE ASSEMBLY — Dwg. 1-141-0052

Item	Code No.	Description
1	1-141-0063	Junction
4	1-141-3219	Comp. Nut (8)
5	1-141-3221	Comp. Sleeve (8)
6	1-141-3225	Nylon Tube (9 ft.)
7	1-141-3211	Metering Unit (5)
8	1-141-3210	Meter Unit (3)
9	1-141-3225	Plug Closure
10	1-141-3220	Comp. Bushing
11	1-141-3224	Brass Tube (.417 ft.)
12	1-141-3293	Comp. Sleeve

BALLSCREW HOUSING LUBE — Dwg. 1-274-9063

Item	Code No.	Description
38	1-101-1033	S.H.C.S., .250-20x.750 (5)
802	1-101-1195	B.H.C.S., .250-20x1.000
804	1-141-3219	Comp. Nut
805	1-141-3221	Comp. Sleeve (3)
806	1-141-3225	Nylon Tubing (9 ft.)
808	1-141-3210	Meter Unit
810	1-141-3220	Comp. Bushing (3)
811	1-141-3224	Brass Tubing (.333 ft.)
812	1-141-3293	Comp. Sleeve
815	1-141-3212	3-Way Junction
834	1-177-0089	Meter
835	1-177-0088	2-Way Junction

BASE ASSEMBLY

Item	Code No.	Description
802	1-101-1192	B.H.C.S., .250-20x1.00
804	1-141-3219	Nut Compression Sleeve (3)
805	1-141-3221	Compression Sleeve (9)
806	1-141-3225	Nylon Tube, .156 (3.5 ft.)
810	1-141-3220	Compression Bushing (3)
812	1-141-3293	Compression Sleeve (3)
815	1-141-3212	3-Way Junction (2)
823	1-141-3291	Metering Unit (2)
826	1-141-3233	Terminal Nut, .375-24
827	1-141-3216	Flexible Hose, 18 inch
828	1-177-0081	Female Coupling
829	1-141-3290	Tube Clip, .156 (2)
830	1-141-0082	Ballscrew Lubrication Tubing
831	1-101-1466	R.H.M.S. 10-3x.500 (2)

QUILL HOUSING ASSEMBLY LUBE — Dwg. 1-274-9062

Item	Code No.	Description
816	1-141-3222	Elbow 90° Adapter
821	1-165-1199	B.H.C.S., 10-32x.500
829	1-141-3290	Tube Clip

HEAD ASSEMBLY LUBE — Dwg. 1-274-9116

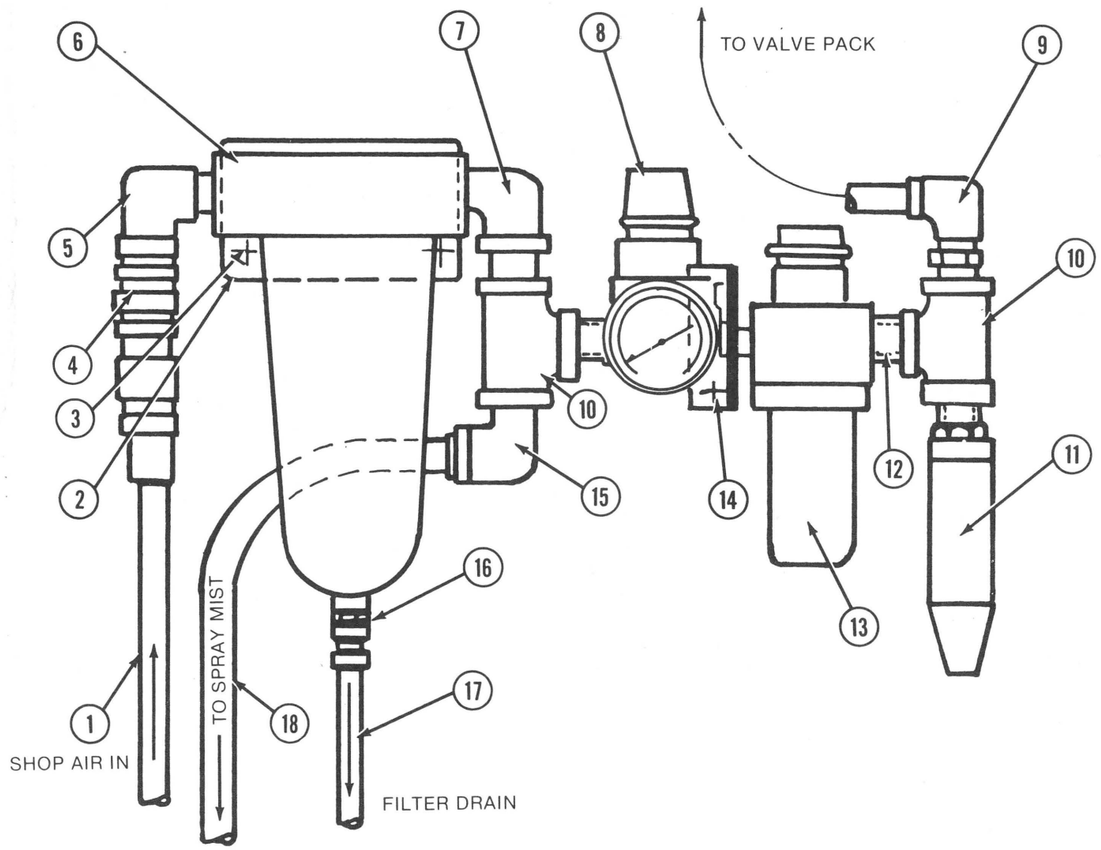
Item	Code No.	Description
804	1-141-3219	Comp. Nut
810	1-141-3220	Comp. Bushing
811	1-141-3224	Brass Tubing (1.7 ft.)
812	1-141-3293	Comp. Sleeve (2)

SADDLE LUBE

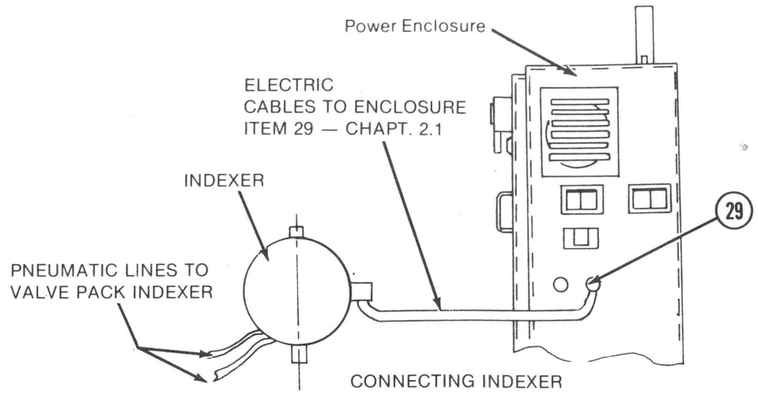
3	1-141-3235	Drive Bushing (6)
2	1-101-1477	R.H.M.S. .250-20x1.000 (2)
13	1-141-3230	Bracket
14	1-101-1475	R.H.M.S. .250-20x.500
25	1-141-3236	Tubing Clip (2)
31	1-101-1429	R.H.M.S. 8-32x.500 (2)

6.3 LUBE, MIST AND PNEUMATICS — Dwg. 1-274-0303

Item	Code No.	Description
1	3-192-7875	Hose Assy.
2	3-150-6461	Bkt, Mounting
3	3-150-8040	Screw, TF .250-20x.620 (2)
4	3-150-7920	Valve, 3-Way - Sleeve Oper
5	3-150-2418	Elbow, 90° Street
6	1-101-0311	Filter, Air
7	3-150-5912	Elbow, .250 90° Street
8	1-101-0264	Regulator, Miniature
9	3-154-1438	Elbow, 90°, Male, Swivel
10	3-150-2724	TEE,.250 CAD Plate, Female (2)
11	1-101-0315	Switch, Press, Oper
12	3-150-5305	Nipple, .250 Close, Parker (4)
13	1-101-0263	Lubrication, Air Oper
14	1-174-0301	Bkt, Support
15	3-154-1438	Elbow, 90° Male S.W.I. (U/W Spray Mist)
	1-101-0779	Plug, Pipe (W/O Spray Mist)
16	1-101-0239	Connector, Parker #68P
17	3-150-1912	Tubing, Thermoplastic (5 ft.)
18	3-154-1440	Tubing, Polyethylene, .375 OD
19	3-193-9142	Plug, Conn. Mod. (Brake Off)
20	1-101-0266	Valve, Dual Pack (W/O Index)
	1-101-0265	Valve, Triple Pack (W/Index)
21	1-165-1943	Washer Lock .250 S (4)
22	1-101-1035	S.H.C.S. .250-20x1.00 (4)
23	3-154-1439	Elbow, 90° Male

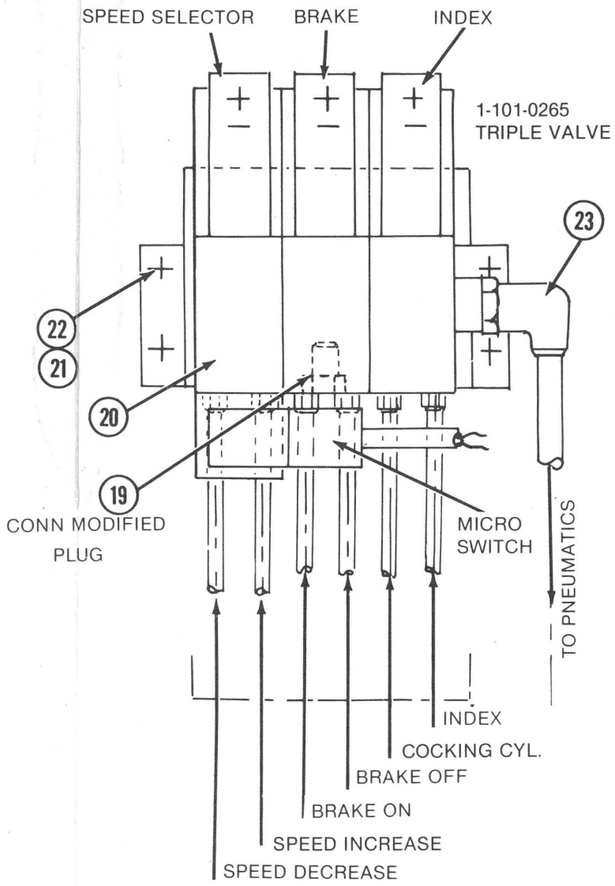


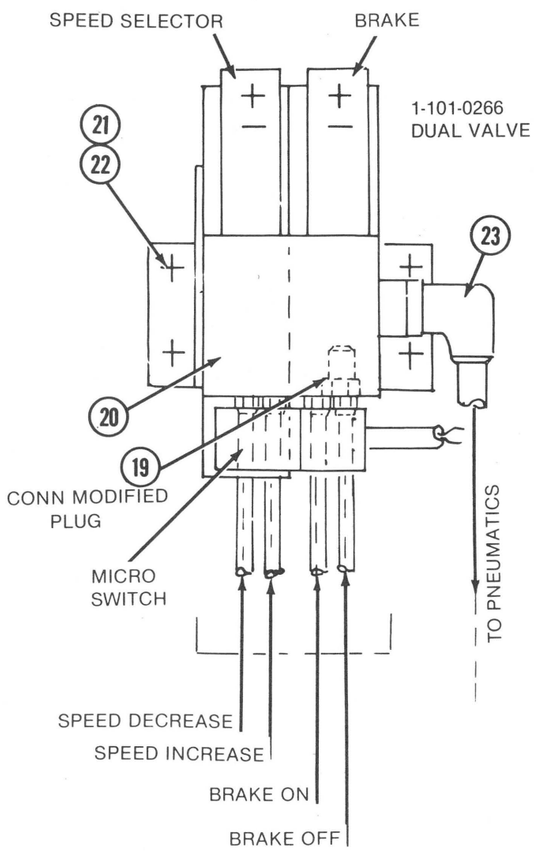
AUXILIARIES SYSTEM



NOTE

RECOMMEND USING ERICKSON MODEL 400-600

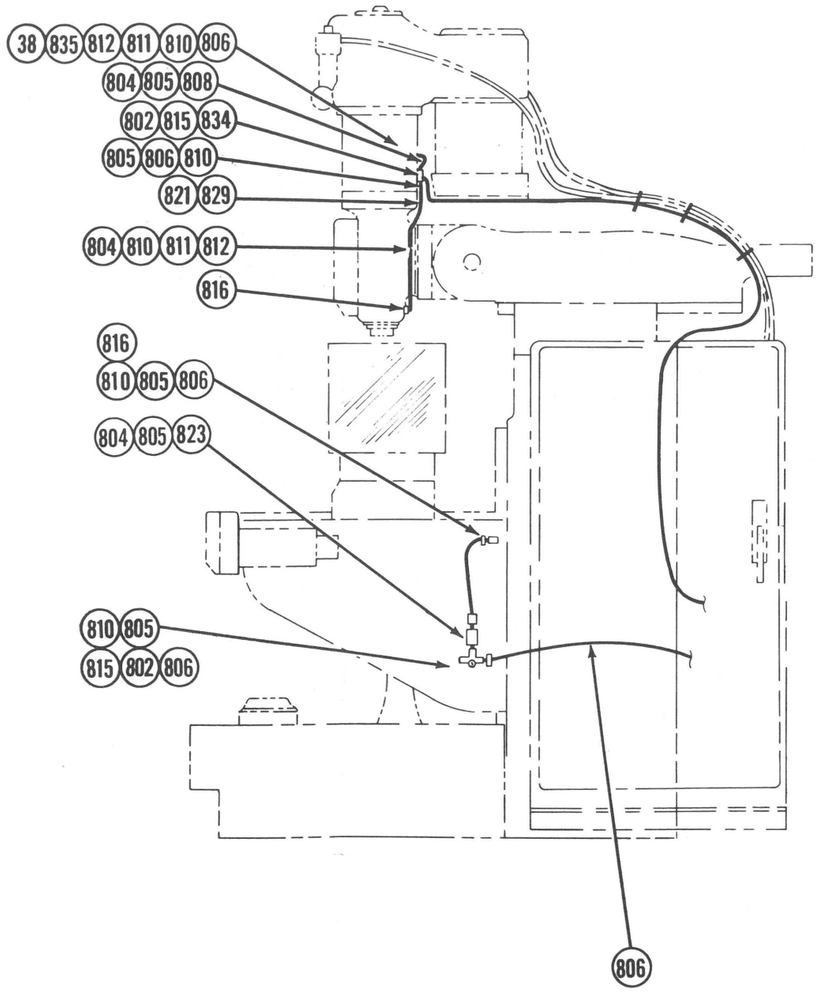


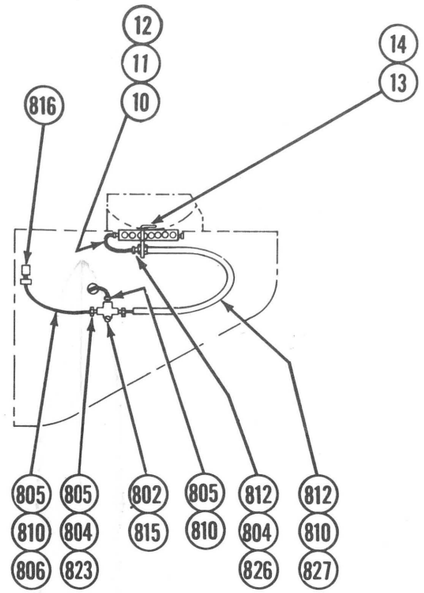


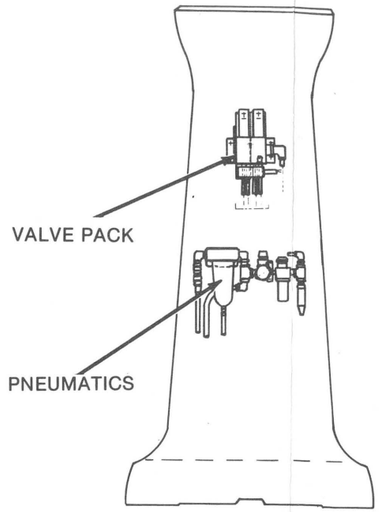
AUXILIARIES SYSTEM

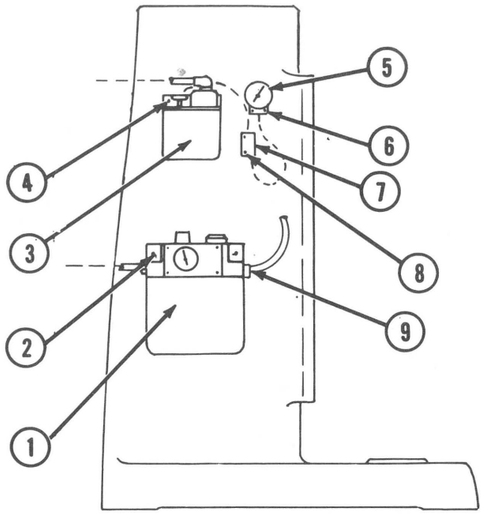
Lubrication Point Chart

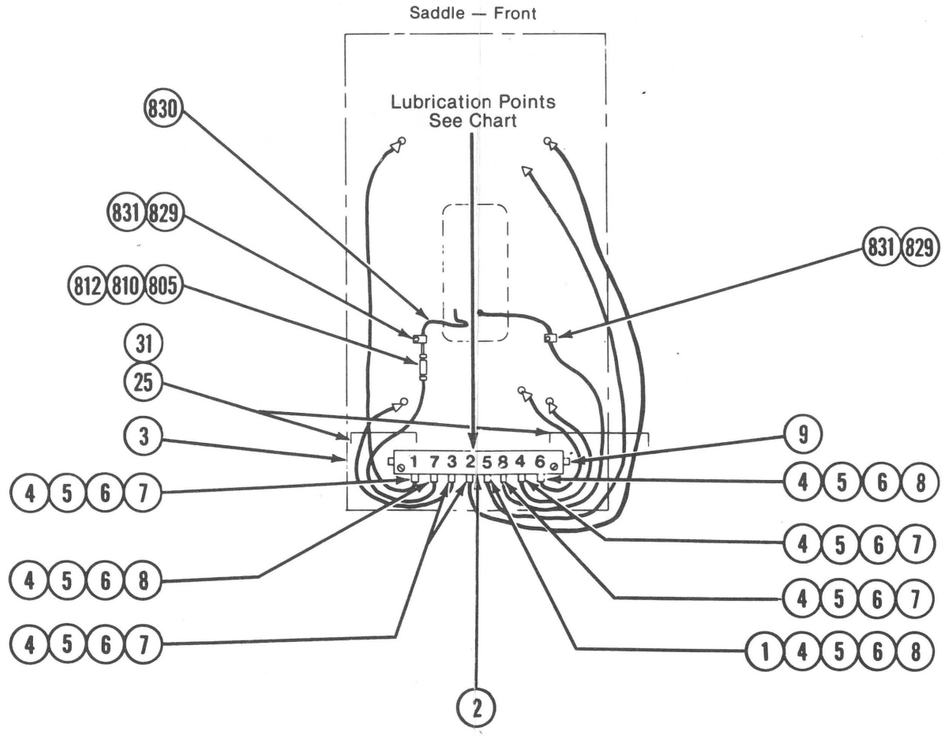
No.	Description
1	Table Way and Gib Right Rear
2	Table Way and Gib Right Front
3	Table Way and Gib Left Rear
4	Table Way and Gib Left Front
5	Knee Way and Gib Right Front and Rear
6	Knee way and Gib Left Front and Rear
7	"Y" Axis Ballnut
8	"X" Axis Ballnut











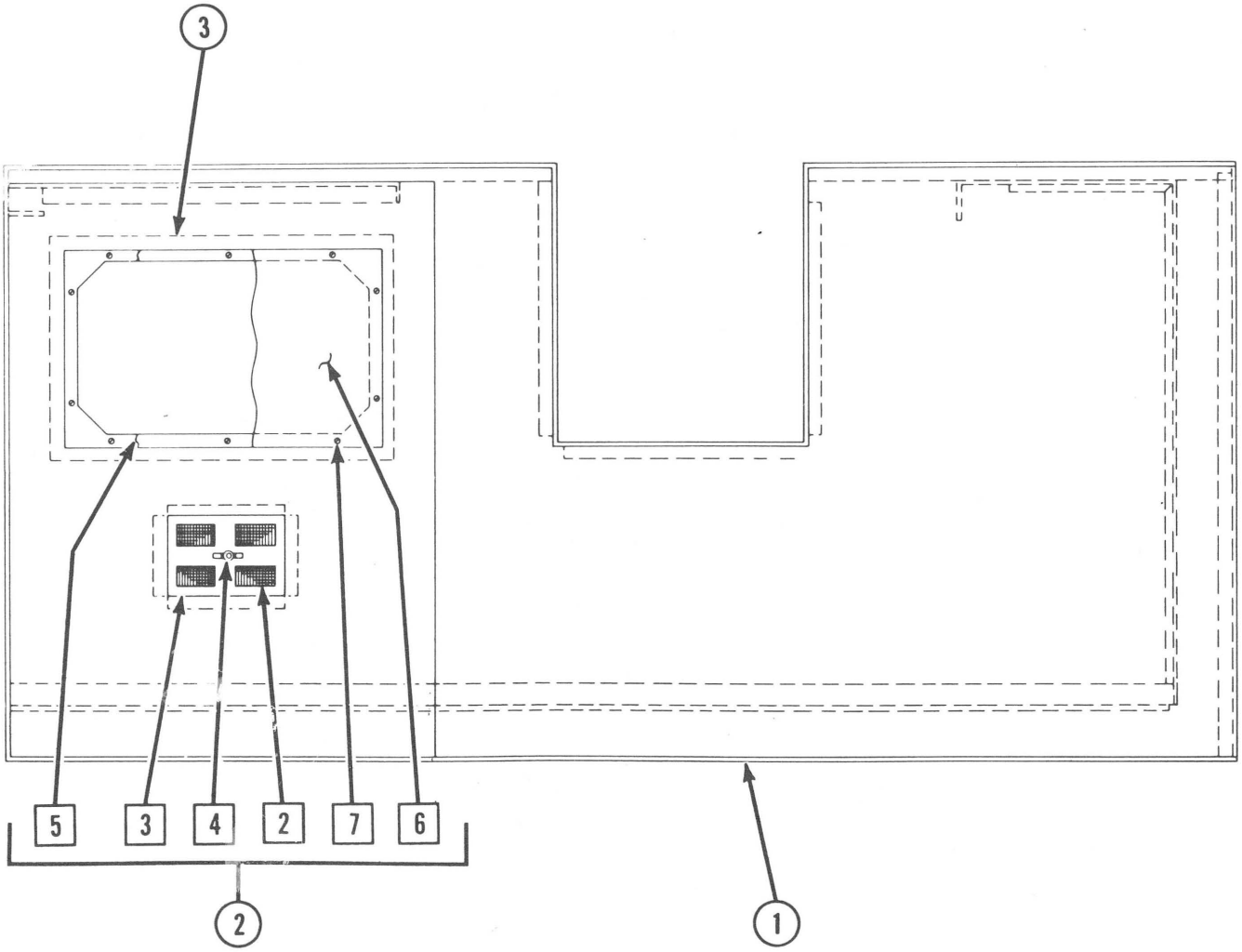
CHAPTER 7
OPTIONAL EQUIPMENT

7.1 BASE PAN AND FILTER ASSEMBLY — Dwg. 3-193-7623

Item	Code No.	Description
1	3-193-6542	Flood Base Pan Assy.
2	3-193-7888	Base Pan Kit
3	3-193-6544	Reservoir

□7.1.1 BASE PAN KIT — Dwg. 3-193-7888

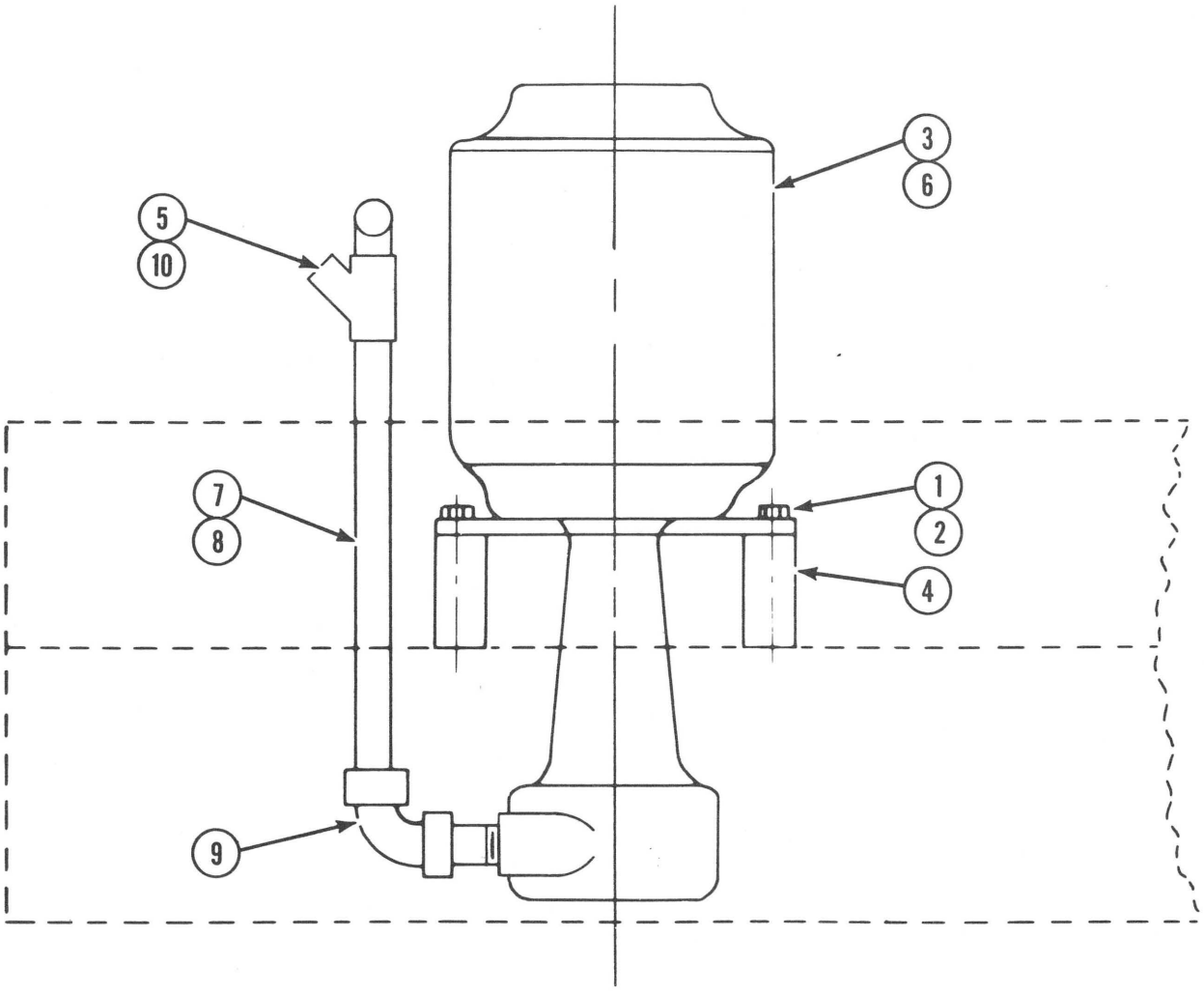
Item	Code No.	Description
2	3-193-7618	Filter
3	3-193-7619	Plate Filter
4	3-154-1135	Wing Nut
5	3-193-7620	Pump Plate Gasket
6	3-193-7622	Pump Plate
7	3-154-1113	Thd. Forming Screw



OPTIONAL EQUIPMENT

7.2 FLOOD COOLANT PUMP AND MOTOR — Dwgs. 1-256-0169 (60 HZ) & 1-256-0171 (50 Hz)

Item	Code No.	Description
1	1-101-1138	H.H.C.S., .250-20x.750
2	1-111-1912	Flat Washer, .250
3	1-156-0163	Coolant Pump and Motor (60 HZ)
	1-156-0261	Coolant Pump and Motor (50 HZ)
4	1-156-0158	Pump Spacer
5	1-156-2671	Check Valve
6	3-192-5862	Flood Coolant Cable
7	1-198-0904	Pipe Nipple, .500
8	1-198-0941	Pipe Nipple, .500
9	1-198-0971	Elbow — 90° Iron
10	1-198-1425	Elbow — 90° CD



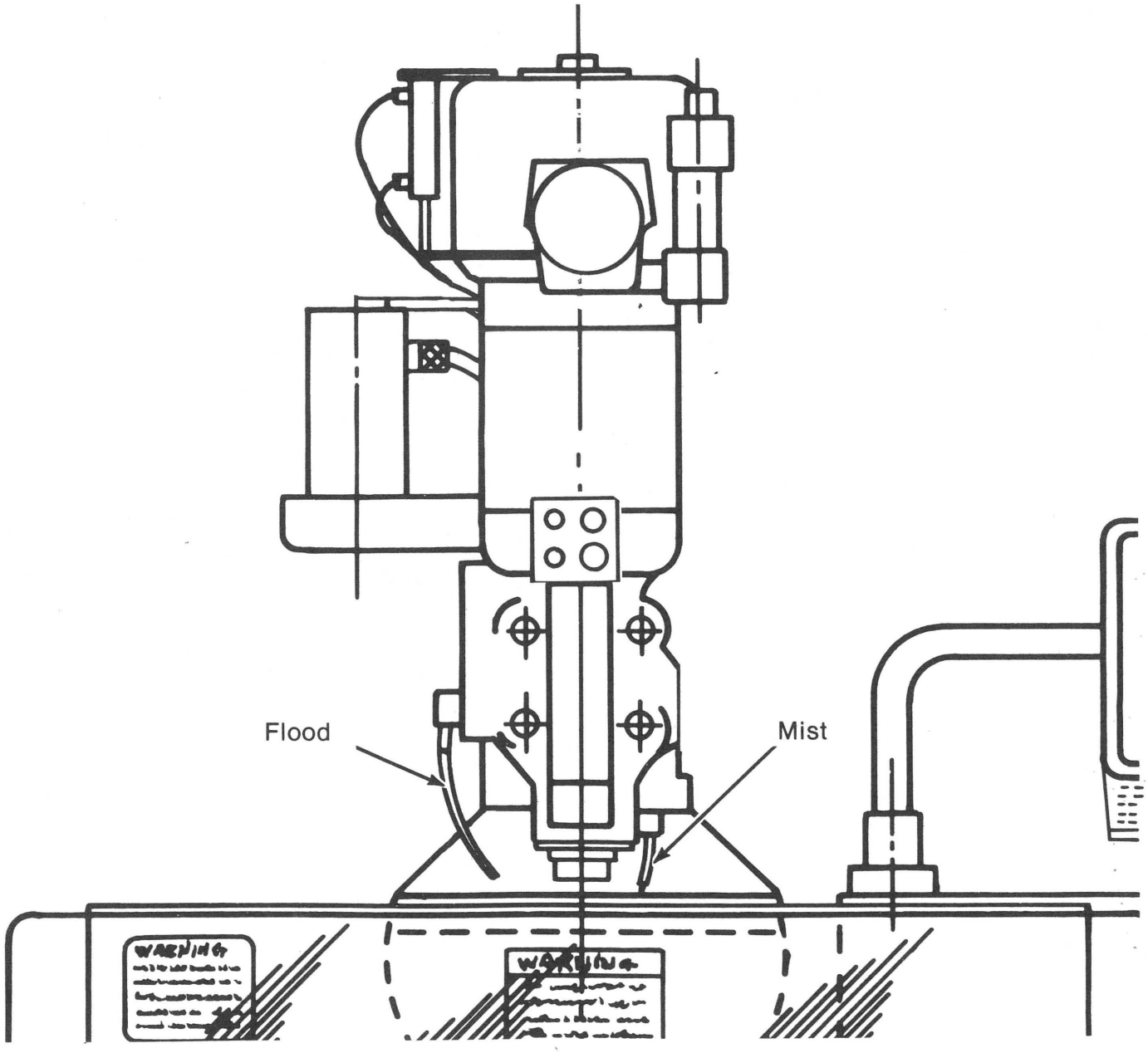
OPTIONAL EQUIPMENT

FLOOD COOLANT, 1 NOZZLE/HEAD, 1 HEAD (TANK ON FRONT) — Dwg. 1-256-0128

Code No.	Description
1-166-5661	Shut Off Valve
1-112-2665	Cable Tie
1-101-1010	S.H.C.S., 10-24x.500
1-156-0263	Coolant Hose, 15 in. Lg.
1-156-5470	Vinyl Tubing, .750x1.000
1-156-5482	Elbow, .5x.75
1-163-5040	Plug Pipe
1-165-2528	Cable Hp 14N Burndy Clamp
1-171-0120	Dupage Hose Clamp, 6
1-171-5470	Vinyl Tubing, .500x.625
1-256-1010	Manifold Block
1-156-5484	Hose Fitting

7.3 NOZZLE ASSEMBLIES — (FLOOD AND MIST) Mist Coolant, 1 Nozzle (Tank on Side) — Dwg. 1-256-0076

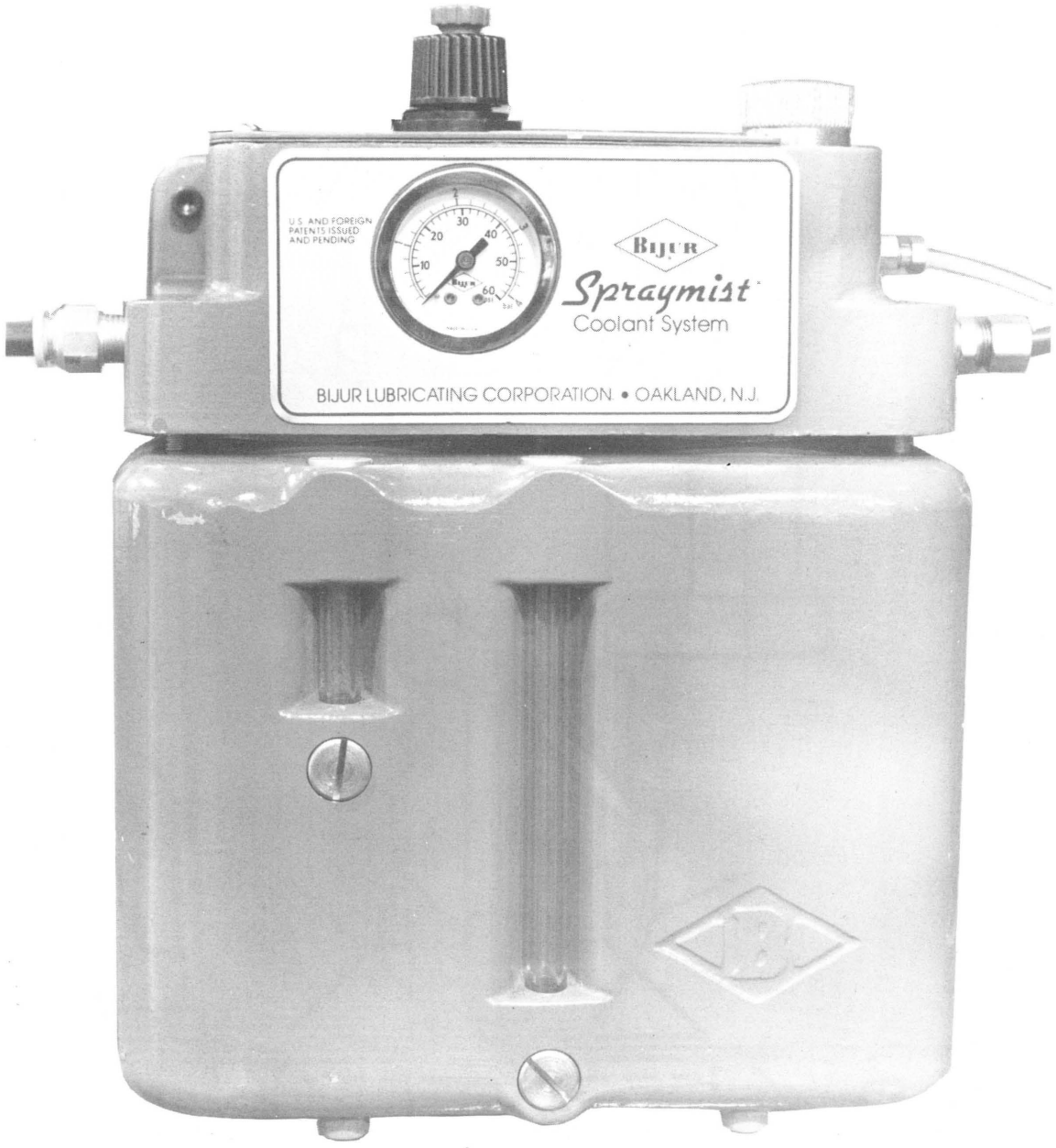
Code No.	Description
1-156-0086	Flexible Jet
1-156-0087	Hose Assembly
1-156-0088	Tube Adapter
1-156-0089	Hose Connector
1-156-0090	Hose Connector, 5/16
1-156-0091	Jet Holder



OPTIONAL EQUIPMENT

7.4 MIST TANK ASSEMBLY —
Dwg. 1-156-0085

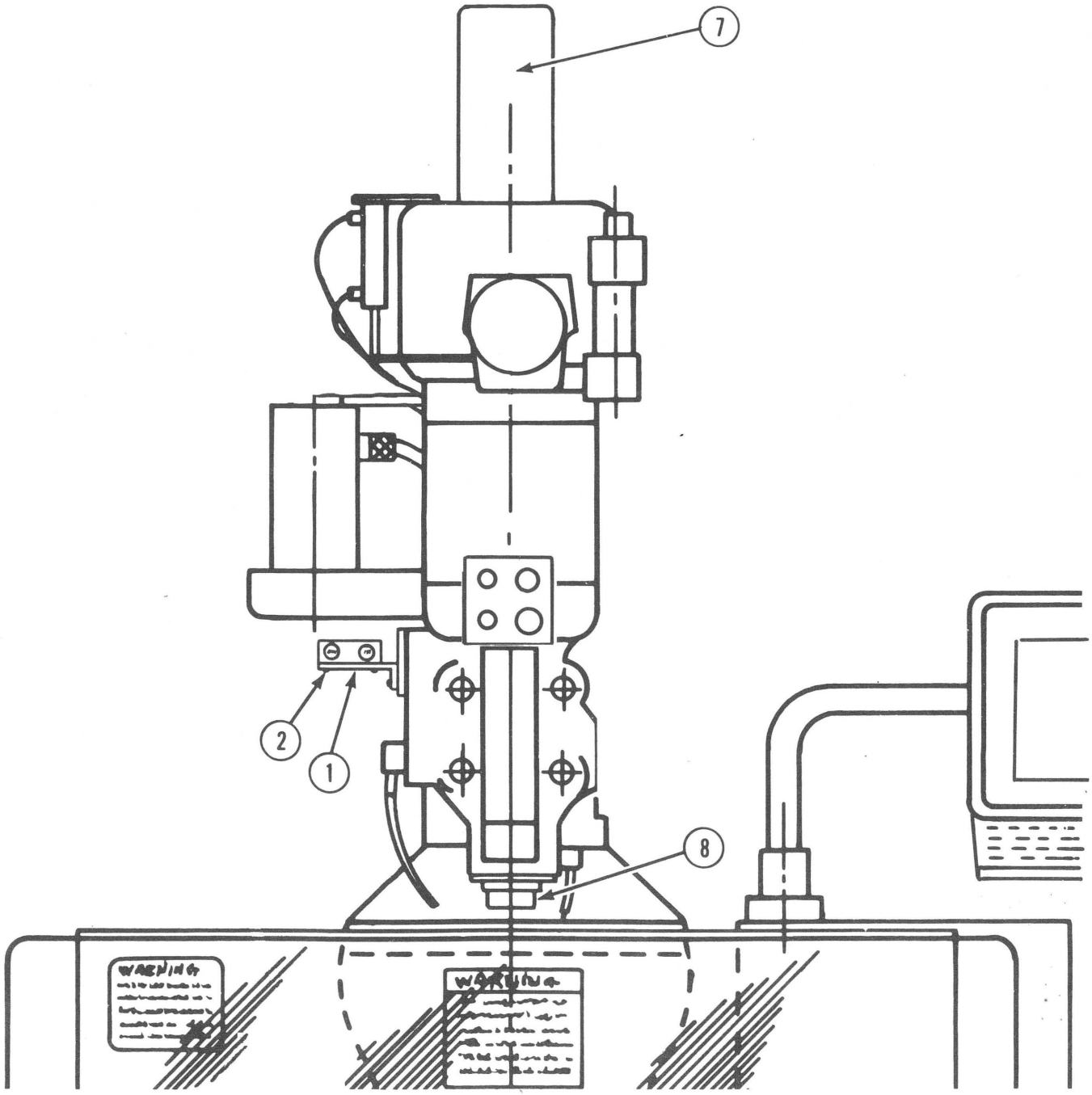
Code No.	Description
1-101-1477	R.H.M.S., .250-20x1.000
1-101-1535	F.H.M.S., .312-18x1.000
1-111-1912	Flat Washer, .250
1-156-0085	1 Gallon Spray Mist Tank



OPTIONAL EQUIPMENT

7.5 POWER DRAWBAR KIT —
Dwg. 1-374-9060

Item	Code No.	Description
1	3-193-9543	Switch Mounting Bracket
2	1-165-1199	B.H.C.S., 10-32x.500 (2)
4	1-101-0240	Tee
5	1-101-0238	Power Drawbar Kit
7	1-157-0570	Power Drawbar Kit
8	1-257-0588	Installation Spindle Sleeve
13	1-101-0251	Elbow



CHAPTER 8
SPARE PARTS

Reference paragraphs noted below are those contained earlier in this manual.

2.1.1 POWER EQUIPMENT ASSEMBLY — Dwg. 3-194-1133

Item	Code No.	Description
NA	3-154-2047	Overload Relay 230
NA	3-154-2050	Overload Relay 460
8	3-154-2046	Starter Reversing

Fuse — See Table 2.1

3.1.3 DRIVE POWER SUPPLY ASSEMBLY — Dwg. 3-193-9893

Item	Code No.	description
18	3-150-8110	BR-1, BR-2 Bridge Rectifier

Fuses — See Table 2.1

4.1 OPERATOR'S CONTROL PANEL ASSEMBLY — Dwg. 3-194-1029

Item	Code No.	Description
2	3-154-0811	Spindle Hi-Lo
3	3-154-8790	Emergency Stop
4	3-150-4166	Hold

4.1.1 OPERATOR STATION ASSEMBLY — Dwg. 3-194-0975

Item	Code No.	Description
4	3-154-0630	Spindle Off
5	3-150-8790	Emergency Stop
6	3-150-4479	Jog
7	3-154-0234	Axis Motion Encoder

5.1 BASE ASSEMBLY — Dwg. 1-274-9031

Item	Code No.	Description
47	1-106-0205	Bearing
127	1-106-0203	Bearing (2)
82	1-106-0204	Bearing
	3-194-1086	DC Servo Motor Assembly
120	1-165-2116	Timing Special Belt
135	1-165-2113	Timing Belt

5.2 HEAD ASSEMBLY — Dwg. 1-274-9116

Item	Code No.	Description
70	1-180-0012	Z Drive Belt
31	1-117-0262	Bearing
36	1-118-2120	Spindle Drive Belt
52	1-155-2106	Back Gear Belt
84	1-118-0254	Bearing (2)
129	1-118-0235	Bearing (2)
130	1-177-0118	Z-Axis Ballscrew Bearing
22	1-118-0252	Bearing
18	1-194-1086	DC Servo Motor Assembly

5.3 PNEUMATIC SPEED CHANGER — Dwg. 1-274-9068

Item	Code No.	Description
38	1-177-0273	Air Motor Cast
39	1-177-0279	Lovejoy Coupling
	3-154-1652	Spindle Speed Potentiometer

6.1 WAY LUBRICATION TANK AND PUMP ASSEMBLY — Dwg. 1-141-3208

Item	Code No.	Description
A	1-141-7850	Waylube Motor

7.1 INDEX CONTROL KIT —

Item	Code No.	Description
21	1-101-0266	Dual Valve Pack With Out Index
	1-101-0265	Triple Valve Pack WIth Index

7.1.1 BASE PAN KIT — Dwg. 3-193-7888

Item	Code No.	Description
2	3-193-7618	Filter
3	3-193-7619	Plate Filter
4	3-154-1135	Wing Nut
5	3-193-7620	Pump Plate Gasket
6	3-193-7622	Pump Plate
7	3-154-1113	Thd. Forming Screw

Bridgeport®
BRIDGEPORT MACHINES, INC.

Code No. 11042517 REV. 1
JANUARY, 1992 G.P.I.